

NONCONVENTIONAL SOIL ADDITIVES: PRODUCTS, COMPANIES, INGREDIENTS, AND CLAIMS

*Prepared as an activity of NCR-103 Committee on
Nontraditional Soil Amendments and Growth Stimulants***

By committee definition, a nonconventional additive is 1) any non-fertilizer material applied to soil or plants claiming to improve physical, chemical or other characteristics of the soil or to improve crop production, vigor, growth or quality; or 2) a guaranteed fertilizer material which is used in an unconventional manner such as very small amounts. A nonconventional program is one where traditional or nontraditional materials are used in a unconventional manner.

Soil and plant additives may be classified under a number of different schemes based on different criteria such as intended use or function, method of application, quantity to be applied, or origin of the material. The following system adopted by the NCR-103 committee includes six primary categories: 1) soil conditioners; 2) mineral nutrient sources used in a nonconventional manner (i.e., low rate); 3) wetting agents and surfactants; 4) biological inoculants and activators; 5) plant stimulants and growth regulators; and 6) nonconventional fertility concepts or programs. Some products by their nature or claims may fall into more than one category.

The materials included in this report are believed by the committee to be in one of the above categories. All descriptions, active ingredients or claims have been taken from labels, advertising, materials, or research reports. The use of product trade names is only for educational purposes and clarity and is not to be construed as product approval or disapproval, implied or otherwise, by the committee, its individual members, or the institutions they represent. Inclusion or exclusion from this listing constitutes neither endorsement nor condemnation.

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2XL (4-16-4-25/6-12-6-26)

Company: LTL Marketing, Box 167, Castlewood, SD 57223

Ingredients: Fortified fertilizer containing traces and micronutrients with selected inoculating bacteria, humic acid, calcinated clay, and graphite

Claims: Creates a healthy micro-environment to encourage early seed germination and healthy, strong seedlings that resist pests and diseases

Remarks: Used for seed treatments on several crops

ACA

Company: United Agri Products, 419 18th St., P.O. Box 1286, Greeley, CO 80631

Ingredients: Ammonium zinc acetate; with guaranteed analysis of 15% N and 17% Zn by weight

Claims: May function as a plant growth regulator; results in stronger root system; at one time suggested to function as a nitrification inhibitor

Remarks: Added with anhydrous NH₃ or with nitrogen solutions starter fertilizers. Recommended rate is 4.5 pt/ton anhydrous, 0.35 lb ACA/100 lb N as N solutions, or 0.33 pt/A with starter or 0.67 pt/A broadcast

Known Research: Anderson (undated); Christensen and Bricker (1976); Kapusta (1978); Randall (1979); Thasanasongchan (1981); Whitney and Lamond (1988); Whitney et al. (1988); Hergert (1989); Oplinger (1990); Cattanaach (1992); Warncke and Gnagey (1992); Watkins et al. (1994); Liu et al. (1994, 1995, 1996); Carlson and Genrich (1994); Genrich and Carlson (1994); Gerwing et al. (1994; 1995); Kmiecik (1995); Kelling et al. (1997a); Ritchie et al. (1997); Bly et al. (1997a); Kelling and Speth (1999, 2001); NCR Committee (1999)

ACA Plus

Company: United Agri Products, 419 18th St., P.O. Box 1286, Greeley, CO 80631

Ingredients: 7.5-0-0 with 8.5% Zn; is a very soluble form of ACA

Claims: Same as ACA

Known Research: Henninger (1999, 2000); Infante-Casella et al. (2002)

Acadian Seaplants

Company: Acadian Seaplants Ltd., Darmouth, Nova Scotia, Canada, B3BN 1XB

Ingredients: 0.3-0.3-4 fertilizer derived from *Ascophyllum nodosum* seaweed

Claims: Increases yield and quality along with improving efficiency of overall fertilizer program; used to supplement existing fertilizer programs and can be applied by foliar spray or through irrigation systems

Accelerator

Company: Enzy-Tech Inc., P.O. Box 1175, Fresno, CA 93715

Ingredients: Derived from sulfates of calcium, cobalt, copper, iron, manganese, and zinc; magnesium oxide, sodium borate, molybdate

Claims: Better yields, speeds up natural biological processes

Known Research: Paul and Lindgren (1993)

Achieve

Company: B&S Research Inc., 4345 Hwy 21, Embarrass, MN 55732

Ingredients: 0-2-3 liquid fertilizer

ACLF Liquid Fertilizers

Company: Terra Max, Inc., 16905 Aberdeen St. NE, Ham Lake, MN 55304
 Ingredients: Low salt flavonal chelated macro, secondary, and micronutrients.

ACTIMAX

Company: Farm Guard Products, 6130 2nd St. NW, Albuquerque, NM 87107
 Ingredients: Humate materials
 Claims: Sulfur and micronutrient source, nutrient release, increased bacterial feeding
 Remarks: Purported to be solubilized Clodbuster

ACTISUL

Company: Farm Guard Products, 6130 Second St. NW, Albuquerque, NM 87107
 Ingredients: Sulfur
 Claims: Sulfur and micronutrient source, nutrient release, increased bacterial feeding

ACTIVAL

Company: Agronics Inc., 701 Madison St., N.E., Albuquerque, NM 87110
 Ingredients: 5-0-17 or 10-15-10 liquid fertilizers with organic colloid dispersing agent
 Remarks: Apparently this company is a subdivision of Farm Guard Products, as they at one time had the same address and list Clod Buster as their primary product

ADDAMAX

Company: Floratine Products Group, Memphis, TN
 Ingredients: Complete fertilizers (4-12-4) with micronutrients and 1 to 4.55% Mo
 Remarks: Intended to supply Mo as a planter box treatment in supplement to standard fertilizer program.

ADVANTAGE

Company: Wabash Soil & Plant Inc., 12015 SR118, Van Nert, OH 45891
 Claims: Reduces surface water tension for better penetration and uniform coverage

Aerata

Company: Nature 2000 Inc., Creekside Center, 120 Portage St., Lodi, WI 53555
 Ingredients: A time-released oxygen product
 Claims: Breaks down solids, crusts, and sludges in manure pits and lagoons; reduces odors

AFB (See Kozgro's AFB)**Ag 10-12 Soil Conditioner**

Company: Ag Nation Products, Inc., P.O. Box 1614, E. Canton, OH 44730
 Ingredients: Alkoxy polyoxyethylene sulfate, 56%; dipentene, 2%; isopropanol, 4%; inert ingredients, 38%
 Claims: Makes soil more porous; increases plant emergence and soil friability
 Remarks: Most effective when applied at 12 oz/A
 Known Research: Baker (1981); Hunt and Baker (1981); Blumberg (1981)

AGGrand Natural Organic Fertilizer

Company: Amsoil Inc., Amsoil Building, Superior, WI 54880
 Ingredients: 4-1-1 fertilizer derived from fish and kelp

AGGreene Natural Organic Fertilizer

Company: Amsoil Inc., Amsoil Building, Superior, WI 54880
 Ingredients: 2-1-1 fertilizer derived from fish and kelp

AgGroSyn

Company: Catalyst Technology Inc., 10545 W. Donges Ct., Milwaukee, WI 53224
 Ingredients: A 10-7-7 fertilizer in a “unique aqueous base containing naturally occurring substances” that attract vital nutrients from the air and soil to the cell
 Claims: Increases microbial activity, creates balanced fertility; increases soil organic matter and humus; reduces fertilizer and herbicide needs
 Remarks: Use at 0.2 gal/A
 Known Research: Kussow (1985); Kelling et al. (1988a)

Agrialife (Possible alternative names: Genesis II, Agrovita, Planterra, Terrasalvo, Agrispon, Nitro/Max, Reward, Respond, Soil Inoculant)

Company: AN-Vent, Inc., 2548 Royal La., P.O. Box 29191, Dallas, TX 75229
 Ingredients: Blue-green algae, filamentous fungi, cytokinins
 Claims: Supply N, increase organic matter content, improve soil conditions and yields
 Remarks: Asymbiotic N fixation simulator
 Known Research: Brookston (1976); Kelling et al. (1978); Lilly (1978)

Agri-II

Company: Agri-World Products, Inc., P.O. Box 208, Rockford, OH 45882
 Ingredients: Ammonium laureth sulfate, 56%; alpha pinene, 3%; methanol, 3%
 Claims: “Soil conditioner”
 Remarks: An aid to improved downward water movement
 Known Research: Hunt and Baker (1981); Murdock (undated)

Agri-Aid

Company: Mosinee Paper Corp., Mosinee, WI 54455
 Ingredients: CaCO₃, 30-40%; small wood fibers, 40-50%; other, 10-15%
 Claims: Corrects soil acidity, soil conditioner, higher yields

Agri-blend (See Aqua-10)

Known Research: Edmeades (2002)

Agriblend Plus

Company: American Soil Technologies, Inc., 122224 Montague St., Pacoima, CA 91331
 Ingredients: Polymers
 Claims: Creates a semi-permeable barrier in soil; increases crop yields; increases quality of crop; reduces leaching, evaporation, irrigation, and compaction
 Remarks: Application rates based on soil texture (20-35 lb/A)
 Known Research: Clark and Carpenter (2001)

Agri-Carb

Company: AgriEnergy Resources, 21417 1950 E. St., Princeton, IL 61356
 Ingredients: Combination of liquid carbon sources
 Remarks: Acts as a food source for soil life, serves as an “anchor” for N products, and is a chelating agent

Agri-Fol '21'

Company: International Production of Energy, Inc., 8401 State Rd. #61, Galion, OH 44833
 Ingredients: 24-0-3 derived from NH_4NO_3 , KNO_3 and urea plus micronutrients (1% Fe, 0.2% Mg, 2% Mn, 0.08% Cu, 0.02% B, and 0.05% Zn)
 Claims: Increases yields 30-300%, lessens need for conventional soil applied fertilizer by 66%; shortens growing time; stimulates root growth
 Remarks: For corn, apply at 3 to 3.5 lb/A

Agri-gains

Ingredients: 9-18-9-1S fertilizer

Agri-Gro

Company: Agri-Gro Marketing, HC 4 Box 123, Doniphan, MO 63935
 Claims: Increases nutrient availability, sugar content, root mass yields, humus; decreases crusting, alkalinity, salt build-up and chemical carryover
 Remarks: A biological soil supplement containing dormant N-fixing bacteria; developed by Dr. Joe C. Spruill

Agrihope

Company: Nippon Shokubai Co., Japan
 Claims: Improves soil water holding capacity
 Remarks: Synthetic polymer

Agrikelp

Company: The Continental Shelf, Pleasant Dr., Lochmere, NH 03252
 Ingredients: Made of seaweed extract from Australian bull kelp
 Claims: Healthier roots and plants; increases ability to withstand stress; stimulates nutrient uptake; increases yields
 Remarks: To be used as a fertilizer supplement

AgriKey

Company: MicroKey Sciences, Inc., 9700 Richmond Ave., Suite 140, Houston, TX 77041
 Remarks: Apparently took over marketing of Fertilaid and also have other tradenames, including Amazon Green and Concern

Agri-Plus

Company: Western Sunburst, Inc., 906 N. Carpenter Rd., Sante Modesto, CA 95351
 Ingredients: A 5-0-0 leonardite mix

Agri-SC

Company: Four Star Agriculture Services Inc., 110 1/2 E. Wabash Street, Bluffton, IN 46714
 Ingredients: Ammonium laureth sulfate, 48%; inert, 52%
 Claims: More porous soil, easier tillage; eliminates wet spots, reduces runoff; increase till effectiveness
 Known Research: Vitosh et al. (1978); Fitch et al. (1989); Kucera et al. (undated)

Agriserum

Company: Farmers Manufacturing Company, Dorsey, IL 62021

Ingredients: "Organic serum of basic life sheltering and life promoting values"

Claims: Larger root system, less drought problems, wakes up nutrients, earlier germination

Remarks: Forms seed coating of beneficial bacteria and materials which are nutritional to bacteria in the soil

Known Research: Crookston (1976, 1977b); Powell and Grundahl, cited in Overdahl (1976); Robertson, cited in Overdahl (1976); Murdock et al., cited in Overdahl (1976); Lessman and McCutchen (1980); Killorn (1991)

Agrispon (See Agralife; also marketed as Nitro/Max, Reward, and Respond)

Company: J and J Agri-Products and Services, Inc., 220 S. 2nd Street, Dillsburg, PA 17019

Ingredients: Trace minerals (not as plant food), 1%; algae, bacteria, fungi, 0.01%

Claims: Accelerates nitrogen cycle; better roots; better soil moisture regime; faster decomposition of crop residues; builds humus; better germination

Remarks: Stimulates asymbiotic N fixation, decomposition, and generation of inorganic acids

Known Research: Herron and Witt (1978a, 1978b); Herron (1979); Baker (1981); Syltie (1981); Laughlin et al. (1982a, 1982b); Elegba and Rennie (1984)

Ag Rite

Company: Weyerhaeuser, Marshfield, WI 54449

Ingredients: By-product of "fire-door" construction

Claims: Acts as a liming material with neutralizing index of 57

Agro-Culture Liquid Fertilizer

Company: 5555 N. Lowell Rd., St. Johns, MI 48879

Ingredients: 8-20-2 and 10-27-5 liquid fertilizers

Claims: Low salt, higher availability

Remarks: Use as pop-up fertilizer at 1 gal/10 bu corn yield

Agro-Lig (Possible alternative name: PGS-10)

Company: American Colloid Co., 1500 W. Shore Dr., Arlington Heights, IL 6004

Ingredients: 84% humates (65% humic acid) with small amounts (generally <1%) of 23 elements, e.g., Fe, 0.5%; Mg, 0.5%; Mn, 0.02%; B, 0.01%; K, 0.07%

Claims: Increases buffering capacity of soil and chelation of metal ions, increased cation exchange capacity and improves phosphate availability

Remarks: Is dry ground formulation of Leonardite; recommended rates 300-500 lb/A broadcast, 15 lb/A banded or 5 lb/A foliar

Known Research: Weis (1985); Weis (1986)

Agro-Lizer (Apparently similar to Calcium-25)

Company: Biochemical Marketing Corporation, 3506 N. Nottingham Street, Arlington, VA 22207

Claims: Increases yield

Remarks: Apparently is a nutrient or micronutrient containing material; for corn 2.2 lb to be dissolved in 100 gal H₂O and sprayed at 10 gal/A

AgroMax (See AgroPlus)

AgroMAX

Company: KT Corp., P.O. Box 9425, Berkeley, CA 94709

Ingredients: Polyethylene glycol 25%; inert ingredients (powdered corn cob and walnut shell) 75%

Claims: Increases crop growth, reduces evaporation, reduces runoff and erosion

Remarks: Apply at 32 lb/A; best when not worked into soil; not recommended for fine-textured soils including silt loams, clay, silty clay, silty clay loams, or silt

Agronomix

Company: Roche Vitamins and Fine Chemicals, Nutley, NJ 07110

Ingredients: Containing one or more of the following: ascorbic acid, biotin, pyridoxine, HC, thiamine hydrochloride, thiamine, mononitrate riboflavin, folic acid, niacineamide, pantothenic acid and inert carriers

Claims: Improves utilization of fertilizers and improves yield and quality

AgroPlus

Company: Agro Plus Inc., P.O. Box 374, Hawkins, TX 75765

Ingredients: Extract of bacteria, yeast and fungi cultures, 10%; adenine, 0.0004%; indolebutyric acid, 0.0004%; indoleacetic acid, 0.0004%; gibberellins, 0.0004%

Claims: Activates biological functions in soil; stimulates germination and growth

Remarks: Biological growth activator; identical labels used for AgroPlus and AgroMax; said to be first version of Grozyme

Known Research: Kelling and Weis (1978); Schulte and Kelling (1978); Oplinger (1979); Kelling et al. (1979, 1980); Frank (1982); Penas (1983); Edmeades (2002)

Agrostemin

Company: Vasad International, Inc., Princeton, NJ

Ingredients: Allantoin, 2.59%; tryptophan, 1.09%; folic acid, 0.16%; glutamic acid, 0.109%; allantoinic acid, 3.3%; orcialanine, 0.25%; adenine, 0.5%; other amino acids, 2.0%

Claims: Stimulates absorption of minerals, decomposition of organic matter; improves stress resistance; gives higher yields

Known Research: Wolkowski and Kelling (1988)

Agrovita (See Agralife)**Agr-Star**

Company: Agr-Star International Inc., 1976 Linn, North Kansas City, MO 64116

Ingredients: Several formulations of liquid fertilizers, including 9-18-9, Insta Cal, 9% N, 9% Ca and 3-18-18

Remarks: Program calls for 3-5 gal/A 9-18-9 plus 3 gal of Insta Cal and may want to use 40-60 lb N/A but "is not a requirement"

Agr-Star Soil Amendment #1

Company: Agr-Star International Inc., 1976 Linn, North Kansas City, MO 64116

Ingredients: Nonyl phenoxy polyethoxy ethanol, 26%

Claims: Increases infiltration and root contact

ALC Alunite Complex

Company: Calunite Corp., Mountainside, NJ 07092
 Ingredients: Mined volcanic deposit including oxides of Ca, Mg, Al, Fe, Cu, Zn, Mo, Mn, K, Na, B, S, P, and Si
 Claims: Improves fertilizer efficiency; retards nutrient leaching
 Remarks: Increases the chemical reactions in the soil solution; mixed with standard fertilizers
 Known Research: Christensen (1977)

Alga-Min+

Company: J3, P.O. Box 9272, Moscow, ID 83843
 Ingredients: 2-11-5 liquid seed and root starter
 Remarks: Use 1.6-3.2 oz/100 lb of seed; may be newly named to Seed Prod
 Known Research: Karrow (1989)

Algistim

Ingredients: Seaweed extract with cytokinins and trace elements
 Known Research: Edmeades (2002)

Algit

Ingredients: Kelpmeal
 Claims: Better quality, higher yields

All-Plant, All-Ferm, All-Free, All-K, All-Tracer, All-Wet

Company: All-Plant Liquid Plant Food, Inc., 821 St. Rt. 511N, R.D. #3, Ashland, OH 44805
 Ingredients: Have several different products, including All-Ferm (a living soil builder), All-Free (gluco-ammonium citrate an organic nutrient sequestering agent), All-K (0-0-30 liquid potash), All-Trace (chelated micronutrient mix), and All-Wet (a soil conditioning and emulsifying agent); no specific ingredients were given in the advertising

Alpine Plant Food

Company: Alpine Plant Foods Ltd., Box 730, New Hamburg, Ontario, Canada N0B 2G0
 Ingredients: Apparently several grades although specific grades not given
 Claims: "Requires much lower rate of application," "superior efficiency," "absolutely uniform," low salt

Amazon Green (See AgriKey)**AMC** (See Phoenix)**AMG-Arex**

Company: Arex of Minnesota, Hwy. 30, New Richland, MN 56072
 Ingredients: 9-18-9 made with KOH
 Claims: Two times more efficient; neutral; low salt

AmiSorb

Company: Amilar International, 6502 S. Archer Rd., Bedford Park, IL 60501
 Ingredients: Carpramid or thermal polyaspartate (copoly[(3-carboxypropionamide)(2-carboxyl-methyl) acetamid])

Claims: Increases nutrient uptake by increasing root branching and root hair development

Remarks: Use 1-2 qt/A

Known Research: Bly et al. (1997b); Duncan et al. (1997); Evers (1999); Gordon (1996, 1997); Lamond et al. (1996a, 1996b, 1997a, 1997b); Lukina et al. (1997); Murdock et al., (1998); Rehm (1997); Sweeney and Kirkham (1997); Thompson (1996, 1998, 1999); Whitney et al. (1996); Woodard et al. (1997a); NCR-103 (2001); Kelling and Speth (2001)

Amplify and Amplify D

Company: Conklin Co. Inc., 4660 W. 77th Street, Minneapolis, MN 55435

Ingredients: Sodium phosphate, adenosine monophosphate 95.8%

Claims: Aids seed germination

Remarks: Developed for cotton, may also be promoted for other crops; Amplify D is planter box treatment of similar ingredients at lower concentration (26.8%)

Known Research: Grabe et al. (1988); Claassen et al. (1999)

Amway Spray Adjuvant

Company: Amway Corp., 7575 E. Fulton Road, Ada, MI 49355

Ingredients: Alkylpolyethoxylated alcohol

Claims: Improves herbicide coverage; increases soil penetration; makes water wetter; reduces water runoff; keeps equipment clean

Remarks: Reduces surface tension

Known Research: Crookston (1977a); Sunderman (1978); Doersch (1979); Kelling (1980); Blumberg (1981); Lawless et al. (1981); Stone (1981); Beck et al. (1983); Wolkowski et al. (1983); Penas (1983); Sunderman (1983); Wolkowski et al. (1985a); Kniep et al. (1987); Murdock (undated)

AP 682 (See BioPlus)

Anti-Stress 550

Company: Polymer Ag, Inc., P.O. Box 9665, Fresno, CA 93793

Ingredients: Water-soluble acrylic latex polymer

Claims: Reduces transpiration water loss; more efficient use of other chemicals

Remarks: To be applied foliarly

Aqua-10 (Possible alternative names: Agriblend)

Company: Aqua-10 Corp., P.O. Box 492, West Beaufort Road, Beaufort, NC 28516

Ingredients: Seaweed foliar spray 2-0.6-1.8

Claims: Increased yield and quality

Remarks: Natural balance of plant nutrients and micronutrients

Known Research: Lilly (1978)

Aqua-Gro

Company: Aquatrols Corp. of America

Ingredients: Blended ester and ether alcohol non-ionic organic wetting agent; granular formulation is 40% (wt) liquid on vermiculite

Claims: Makes water wetter; cuts down evaporation loss; increases fertilizer efficiency

Remarks: Reduces surface tension

Known Research: Valoras et al. (1969); Hunt and Baker (1981)

Aqua Humus

Company: America Humates Inc., Dallas, TX
 Ingredients: 12-9-6 fertilizer containing Leonardite
 Known Research: Egli and Pendleton (1965)

Aqua-Mate

Company: Hydrotex, Dallas, TX 75247
 Claims: Improves soil penetration, root contact, and plant coverage; reduces runoff and evaporation; improves irrigation
 Remarks: Nonionic wetting agent and surfactant; reduces surface tension

AQUA-MUL

Company: Bioferm International, 209 Chester Ave., Moorestown, NH 08057
 Ingredients: Ethoxylated nonylphenols, ethoxylated alcohols, K-polyhydroxylignin sulfonates, K-fulvo-humates, marine algae extracts and yeast extracts
 Claims: Increases water penetration, fertilizer efficiency and root growth, prevents puddling
 Remarks: Soil penetrant and chelating agent

Aquasorb

Company: SNF Floezger, 41 Rue Jean-Huss 41, 4200 Ste. Etienne, FRANCE
 Ingredients: Specific ingredients not given; apparently a synthetic polymer
 Claims: Synthetic water retention aid, increases moisture retention 40-200 times and reduces water consumption 4-6 times; not toxic to plant growth
 Remarks: Use 1-4 lb/cubic yard of soil

ARISE

Company: Loveland Industries, 2307 W. 8th Street, Loveland, CO 80537
 Ingredients: Marine algae extracts, 4%; microbial extracts, 5%; acetic acid (preservative), 2%
 Claims: Promotes emergence, root growth, plant vigor and increases yields
 Remarks: Seed treatment

Arouse

Company: Alpine Plant Foods Ltd., 3185 Cline Road, Coryton, IN 47112
 Ingredients: 3.5% seaweed extracts, 0.5 ppm indoleacetic acid, 0.5 ppm indolebutyric acid with some micronutrients (0.5% Mg, 0.2% Fe, 0.1% Mn, 0.0005% Mo, 0.1% Zn)
 Claims: More mellow soil, increased nutrient availability, yields and quality and less soil erosion
 Remarks: Overall rate of 0.5 gal/A is recommended (split between herbicide, starter and foliar)

Asco-Extract

Company: Acadian Seaplants Ltd., 202 Brownlow Ave., Tower D, Suite 304, Dartmouth, Nova Scotia, Canada B3B 1T5
 Ingredients: Soluble marine algae powder made of *Ascophyllum nodosum* with guaranteed analysis of 1-1-15
 Claims: Increased resistance to pests and diseases; increased stress tolerance, sugar content, root growth, yields and better storage qualities
 Remarks: For corn, apply as seed treatment plus three foliar applications of 1 gal/A of concentrate

Asset

Company: Setre Chemical Co., 5100 Poplar Ave., Suite 3200, Memphis, TN 38137

Ingredients: 20% N and 2% Mg derived from magnesium ammonium carboxylates

Claims: Stimulates root growth, gives stronger stalks and higher yields

Remarks: Apply 1/3 pt/A with starter or anhydrous or 1/3 to 2/3 pt/A broadcast, depending on soil texture; to be used with anhydrous ammonia or other N-based liquid fertilizers

Known Research: Alley (1993); Rosen and Birong (1998); Kelling et al. (1998)

Asset RS, Asset PPS, Asset RTU

Company: Helena Chemical Co., 6075 Poplar Ave., Suite 500, Memphis, TN 38119

Ingredients: Various grades (i.e., 5-15-1, 6-20-5) but all contain ammonium carboxylates

Claims: Promotes large, strong root system, larger kernels, improves uptake of nutrients, moisture, higher yields

Known Research: Woodard et al. (1995, 1996); Bly et al. (1997a); Henninger (2000)

Auxigro

Company: Auxein Corp., 3125 Sovereign Dr., Suite B, Lansing, MI 48911-4240

Ingredients: Gamma amino butyric acid

Claims: Higher yields, increases the absorption of nutrients; called a metabolic primer

Remarks: For potatoes; apply 5 oz/A at "hooking," apply same amount 21-28 days after first application

Known Research: Binning et al. (2000); Stevenson and James (2000); Giles and Cattanach (2000b, 2001b); Henninger (1999, 2000); Hopkins (2003)

Awaken

Company: United-Agri Products, 419 18th St., P.O. Box 1286, Greeley, CO 80631

Ingredients: 16-0-2 fertilizer containing zinc ammonium acetate (ACA)

Claims: Improves plant vigor, yield and stress tolerance

Remarks: Recommended rates of application 1.67 to 4 qt/A, in furrow or impregnated

Known Research: Giles and Cattanach (2000a); Henninger (1999, 2000); Infante-Casella et al. (2002)

AZOBAC

Company: Bioferm International, 209 Chester Ave., Moorestown, NJ 08057

Ingredients: Azotobacter cultures in combination with fractionated fulvo-humate seed penetrants and trace nutrients complexed with water inhibiting starch polymers

Claims: Shortens germination period, more uniform germination; improves disease resistance, plant vigor, frost resistance, crop quality and yields

Remarks: Seed inoculant

Azobacterin

Ingredients: A generic term for inoculants that contain *Azotobacter chroococcum*

Claims: Asymbiotic nitrogen fixation increased

Known Research: Dunigan (1979)

AZOMIN

Company: Bioferm International, 209 Chester Ave., Moorestown, NJ 08057

Ingredients: Auxin and cytokinin supplying microbial extracts, trace minerals, essential nutrients and fulvo humates

Claims: Promotes mobilization and translocation of Fe in plants, promotes early maturation, frost resistance, disease resistance, retards senescence, germination and improves yields

Remarks: Seed treatment and foliar spray

Azomite Soil-Ayd

Company: Azomite, 905 N. 6th St., Phoenix, AZ 85004

Ingredients: Mined deposit of colloidal silicates with claimed concentrations of 66 elements

Azospirillum

Company: Bio-Technology General (Israel), Ltd.

Ingredients: *Azospirillum lipoferum*

Claims: Provides fixed N to corn roots in symbiotic relationship

Remarks: Nitrogen-fixing bacterium that preferentially infects corn roots

Known Research: Sims and Sommers (1985); Martin et al. (1993); Purcino et al. (1996); Woodard et al. (1997); Farber (1993)

BacAtack (Detox and LS)

Company: Bio/Syn Research Associates, Inc., P.O. Box 451, West Des Moines, IA 50265

Ingredients: A dried, powder microbial inoculant containing 500 billion organisms per pound

Remarks: Use 1 lb/A; Detox apparently to be land applied; LS apparently to be applied to wastes such as liquid manure pits.

BAC-T_x

Company: Advanced Science and Technology Corp.

Claims: Increases plant growth and flavor; decreases susceptibility to disease and insects; improves soil aeration and water percolation

Remarks: A biodegradability accelerator that aids in the digestion of cover crop and fertilizers

Balance

Company: National Ag Products Development Inc., 1235 100th Street SE, Byron Center, MI 49315

Ingredients: Extract of Leonardite, 8% Ca and 260 ppm Fe

Claims: Increases P and Fe availability; stimulates microorganisms

Remarks: 1 qt replaces 200-500 lb of dry humate; subtitled a "pH buffering agent"

Bal-Natur-Ate

Ingredients: $\text{Al}_2\text{Si}_4\text{O}_{10}\text{OH}_2$; lists 27 elements present including 8% K

Claims: Food supplement, fertilizer replacer, yield increases

Remarks: Organic mineral fertilizer and soil conditioner

Basic H

Company: Shaklee Corp., 1900 Powell Street, Emeryville, CA 94608

Ingredients: Linear alcohol alkoxyates, 28%

Claims: Helps plants absorb nutrients, improves yields, protein content, makes water wetter, reduces runoff

Remarks: Nonionic wetting agent; now specifically disclaiming effects on yield, nutrient release, or pesticide activity

Known Research: Sunderman (1978); Doersch (1979); Kelling (1980); Kelling et al. (1980); Hunter and Baker (1981); Lawless et al. (1981); Stone (1981); Wolkowski et al. (1983); Penas (1983); Sunderman (1983); Wolkowski et al. (1985a); Rehm and Fenster (1986); Kniep et al. (1987); Murdock (undated)

Bayfolan

Company: Helena Chemical Co., 6075 Poplar Ave., Suite 500, Memphis, TN 38119
 Ingredients: Contains 9-6-5 and micronutrients in chelated form
 Claims: Improves yield, quality, ability to recover from damage and root growth
 Remarks: Foliar spray
 Known Research: Randall, cited in Overdahl (1976)

Bestline LC

Remarks: Apparently a wetting agent
 Known Research: Doersch (1979)

Best Plant Food

Company: Best Plant Food Products, Inc., RR5, Box 135, Sylvania GA 30467
 Ingredients: Several formulations available, including 9-18-9, 10-10-10 and 3-18-18
 Claims: Low salt, pH balanced fertilizer

Bio-A

Company: Sybron Biochemical, 111 Kesler Mill Rd., Salem, VA 24153
 Ingredients: 99% bacteria culture of *Bacillus* and *Pseudomonas*
 Claims: Improves nutrient utilization and reduces plant stress

BIO-ACT

Company: Cu-Fe-Co Manufacturers, P.O. Box 182, Kearney, NE 68847
 Ingredients: Complex organic-inorganic fermentation product
 Claims: More mellow soil, better moisture retention and faster decomposition of residues
 Remarks: Designed to enhance microbial growth
 Known Research: Grabouski and Wiese, cited in Overdahl (1975); Watkins et al. (1995)

BioAgriZyne-682

Company: Astarte, Inc., P.O. Box 3062, Garland, TX 75041
 Ingredients: Indole-3-acetic acid, 0.005%; indole-3-butyric acid, 0.0025%; naphthoxyacetic acid, 0.006%; gibberelic [sic], 0.004%; thiamine, 0.007%
 Claims: More rapid germination, better root development, improved yield and crop quality; reduces fertilizer need
 Remarks: Applied at 8 oz/A (other literature says 16 oz/A) prior to or shortly after planting; apparently are other BAZ numbered products

Bio-Blue (See Midwestern Bio-Ag)

Ingredients: 3 grades of "100% usable plant food"

BioBoost

Company: Midwestern Bio-Ag, Hwy. ID, Box 126, Blue Mounds, WI 53517
 Ingredients: Approx. 4% chelated Zn
 Known Research: Kelling et al. (1996)

BioBPlus

Company: Sybron Biochemical, 111 Kesler Mill Rd., Salem, VA 24153
 Ingredients: Bacterial cultures of *Bacillus*
 Claims: Improves utilization of nutrients; increases resistance stress

BioC

Company: AgriEnergy Resources, 21417 1950 E. St., Princeton, IL 61356
 Ingredients: Digested chicken manure with algae complex

Bio Cal (See Midwestern Bio-Ag)

Ingredients: Not specifically given but contains 30-34% Ca, 4-6% S
 Remarks: Apparently being sold as liming material with very small particle size; to be applied at 500-2000 lb/A

Bio-Cat Sure-Grow

Company: Bio-Catalytic Corp., Fort Worth National Bank Bldg., Suite 1810, Fort Worth, TX 76102
 Ingredients: Biological catalyst that includes micronutrients
 Claims: Increases yields, accelerated growth, uniform ripening, sturdier plants
 Remarks: Activates the soil microorganisms

Bio-Chem F

Known Research: Dow et al. (1976)

Bio-Control

Company: KLM Bio Systems, Inc., Bloomington, MN 55437
 Claims: Reduces thatch in lawns and decreases fusarium and other diseases
 Remarks: Contents of three bottles (no ingredients given) are mixed and sprayed on lawn

Bioenergy Plus

Company: BioGREEN, Inc., Suite 175, 6400 Atlantic Blvd., Atlanta, GA 30071
 Ingredients: Mixture of dried seaweed, chicken manure, wood ashes, granite dust, peanut hulls, and feather meal with guaranteed analysis of 2-1-1
 Claims: High yields; tastier produce; increases nematode resistance

Bio-Forge

Company: Stoller Enterprises, Inc., 4001 W. Sam Houston Pkwy N., Suite 100, Houston, TX 77043
 Ingredients: 2-0-3 derived from urea and KOH
 Claims: Stimulates early growth of some crops
 Remarks: Apply 1 pt/A before plants have four leaves
 Known Research: Whitney and Gordon (1998)

Bioform FPH 8-8-8

Company: Hallier Enterprises, P.O. Box 67, Vermillion, KS 66544
 Ingredients: Fortified fish protein hydrolysate and seaweed extracts
 Claims: Higher yield; earlier maturation
 Remarks: To be used in supplement to conventional fertilizer program; for corn, apply at 1 qt/A
 2 weeks before tasseling
 Known Research: Urwiler and Stutte (1988)

Biogenesis I, III SDG, IIISD

Company: Tainio Technology and Technique, Inc., S 12102 Andrus Rd., Rt. 2, Box 286,
 Cheney, WA 99004
 Ingredients: Apparently these are live microbe inoculants
 Claims: Prevents root diseases; stimulates beneficial microbes

BIO-GRO

Company: Bioproducts Oregon Ltd., Warrenton, OR 97146
 Ingredients: 10-5-5 with micronutrients present
 Remarks: Liquid fish fertilizer

Bio-Humic Fertilizer

Company: Wonder Life Enterprises, Inc., Hwy. 21, P.O. Box 3746, Bryan, TX 77801
 Ingredients: Various low analysis fertilizers with grades such as 2-2-2, 0-2-2, 0-1-1, and 4-2-2;
 all contain small amounts of trace elements Ca 1%, Mg 0.5%, S 1%, B 0.02%, Cu
 0.05%, Fe 0.1%, Mn 0.05%, Zn 0.05%
 Remarks: Recommended rate is 400 lb/A and used in conjunction with Bio- Humic Agricultural
 Production Systems

Bio-Humus

Company: AgriEnergy Resources, 21417 1950 E. St., Princeton, IL 61356
 Ingredients: Extract of mined humates, manure tea, and compost tea

Bio-K

Company: AgriEnergy Resources, 21417 1950 E. St., Princeton, IL 61356
 Ingredients: 1-0-5 from two K sources

Bio-Life

Company: Bio-Life Inc., Box 149, Ionia, IA 50645
 Ingredients: Humic acid, 15%; concentrated humus, 15%
 Claims: Improves tillage; reduces soil erosion; increases water holding capacity; stimulates plant
 enzymes

Bio L.I.F.E

Company: Global Farming Systems, Ltd. and T.L.P. Enterprises, 21030 Trebec Ave., Euclid,
 OH 44119
 Ingredients: A concentrated microbial inoculant including N-fixing bacteria
 Claims: Reduces N need 80%; increases yields; eliminates need for pesticides
 Remarks: Apply 1 gal/10 acres

BIO-MAG

Company: Harold Forster Industries, Suite 2, 802 16th Avenue, SW, Calgary, Alberta
 Claims: Improved germination and yield, shorter growing season required
 Remarks: Magnetic seed treatment
 Known Research Grabe et al. (1988)

Bio-Mix

Company: Tainio Technology and Technique, Inc., S 12102 Andrus Rd., Rt. 2, Box 286, Cheney, WA 99004
 Ingredients: A specially blended nutrient package
 Claims: Gives plants a balanced start
 Remarks: Apply at 1 lb/A; same name used for dairy manure tea sold by AgriEnergy Resources, Princeton, IL

Bio Pac Vital

Company: Biosoiltec Management, Inc., 300 N. Ladd, Pontiac, IL 61764
 Ingredients: Have various crop specific micronutrient packages as EDTA chelates in a solution with auxins, gibberellins, cytokinins and indole compounds
 Remarks: Applied at about the same rate as is typical for chelated micronutrients

Bio-Phos

Company: AgriEnergy Resources, 21417 1950 E. St., Princeton, IL 61356
 Ingredients: 10-26-0 derived from phosphate combined with carbons

BioPlus (Several products including AP682, HV682 Soil Stabilizer, SS100, Micro 700, Micro 800, ADD660)

Company: Agro Marketing, Inc., P.O. Box 303, Hawkins, TX 75765
 Ingredients: Most products are “poly-co-ferment” liquid complexes with vitamins and hormones; various concentrations of compounds such as gibberellic acid and indoleacetic acid; micro series are apparently kelp extracts
 Claims: Root and growth stimulant; better yields; more efficient nutrient use, better soil condition; some variation with product
 Remarks: For AP682, apply 0.1 gal/A; stimulates soil microbes; claims to be a second generation of AgroPlus
 Known Research: Kelling and Schulte (1991)

Bio-Prime

Company: Wonder Life Corp. of America, 5875 Fleur Drive, Des Moines, IA 50315
 Ingredients: None specified
 Claims: Increases biological proliferation and N fixation, releases soil nutrients
 Remarks: Apply at 1 qt/A

BioRoot

Company: Midwestern Bio-Ag, Hwy ID, Box 126, Blue Mounds, WI 53517
 Ingredients: 2-0-1 blended from kelp, fish, meal, diatomaceous earth, and molasses
 Claims: Increases root system; lowers insecticide need
 Remarks: Apply at 10-20 lb/A

Bio Seed Gard

Company: AgriEnergy Resources, 21417 1950 E. St., Princeton, IL 61356
 Ingredients: Blend of mycorrhizae and trichoderma in a unique blend of food sources
 Remarks: Use 4-8 oz/100 lb seed

Biosorb SCF

Company: Energro, Inc., 8300 N. Hayden Road #207, Scottsdale, AZ 85258
 Ingredients: Is a starch-graft polymer applied as a seed coating that may include micronutrients
 Claims: Faster germination, earlier emergence, improved stands and higher yields

Bio Start (Possible alternative name: Nitroac)

Company: Bio Soil Tec Management Inc., P.O. Box 13, Pontiac, IL 61764
 Ingredients: Concentrated extract of bacteria, yeast and fungi cultures 5%, including *Bacillus subtilis*, *B. megaterium*, *B. cereus*, *B. thuringiensis*, *Azotobacteraceae*, *Rhizobium japonicum*, *R. leguminosorum*, *Aspergillus* and *Lactobacillus*
 Remarks: Apply 1 gal/5 acres

Bio-Till

Company: Pro-Ag Inc., 2072 East Center Circle, Minneapolis, MN 55441
 Ingredients: Labeled as 20-5-5, from aqueous NH₃, phosphoric acid, KOH with MnO, FeO, and CuO, but advertising stresses presence of over 100 different bacteria and other living organisms; also contains biochemical activator
 Claims: Makes soil nutrients more available; promotes natural fertility processes; increases yields
 Remarks: Used at 13 oz/A, reduces fertilizer needs by 70%
 Known Research: Watkins et al. (1994); Rosen et al. (1995)

Bio-Trace

Company: LTL Marketing, Box 167, Castlewood, SD 57223
 Ingredients: Blend of secondary and micronutrients (2.5% S, 0.02% B, 0.05% Cu, 1% Fe, 2.5% Mn, 5% Zn) in a mixture of enzymes
 Claims: Enhances nutrient uptake; releases bound nutrients; improves soil tilth

Biotron (See P3K)**Bioveg**

Remarks: Apparently a wetting agent
 Known Research: Doersch (1979)

Bivert

Company: Stall Chemical Co., 1006 Paulsun Drive, San Antonio, TX 78219
 Ingredients: Amine salts of organic acids, aromatic acid, aromatic and aliphatic petroleum distillate
 Claims: Reduces leaching; reduces evaporation; increases coverage of herbicides

Black Powder

Ingredients: Contains iron and traces of other nutrients
 Claims: Reduces fertilizer need

BLEND

Company: Bio-Huma-Netics
 Remarks: Apparently a nutrient containing foliar material

Blitz

Company: Ag Spectrum, P.O. Box 215, 428 E. 11 th St., DeWitt, IA 52742
 Ingredients: 58% ammonium laureth sulphate

Bolt (AmiSorb for sugar cane)**Boron Plus**

Company: Custom Chemicides, P.O. Bxo 11216, Fresno, CA 93772
 Ingredients: 5% boron with organic chelating agents

Bortrac150

Company: Phosyn Plc., Wellington Rd., The Industrial Estate, Pocklington, York, Y04, 2NR, United Kingdom
 Ingredients: 15% liquid boron

Bountiful 8-8-8 (see Eco-Gro)**BOV-A-MURA**

Company: PBI Gordon Corp., Kansas City, KS
 Ingredients: Solution of filtered, blended and stabilized manure from selected dairy farms, treated with herbs to deodorize
 Claims: Stimulates soil organisms, releases plant nutrients
 Remarks: A “natural soil activator”; recommended for lawns, turf, and gardens

Breakthrough (Breakthru)

Company: American Agriproducts Corp., 5432 Edina Ind. Blvd., Edina, MN 55435
 Ingredients: Allylpolyoxyethylene ethanols, isopropanol, dimethylpolysilox, 60.9%
 Claims: Releases soil nutrients, increases micronutrient uptake, makes water wetter, runoff and erosion reduced
 Remarks: Soil penetrant

Bright Sun Soil Booster

Company: Cargill, Molasses Liquid Products Div., Box 9300/48, Minneapolis, MN 55440
 Ingredients: Guaranteed analysis of 2-2-2 derived from KNO₃, urea, amino acids, and phosphoric acid; implied that it contains a carbon source
 Claims: Accelerates growth of soil microbes; provides nutrients; increases infiltration; reduces compaction; makes fertilizers “slow release”
 Remarks: Apply 30 to 150 gal/A with irrigation water

Burst (See ARISE)

Company: Loveland Industries, 2307 W. 8th Street, Loveland, CO 80537
 Ingredients: Marine algae extract, 4%; microbial extract, 5%; acetic acid (preservative), 2%
 Claims: Promotes root growth, vigor and yields, assists in germination
 Remarks: Foliar spray
 Known Research: Missouri (1978a); Edmeades (2002)

BX (Possible alternative names: P3K, Biotron)

Company: Yolo Microbion Co., 511 Main Street #209, P.O. Box 1574, Woodland, CA 95695
 Ingredients: Contains several groups of microorganisms including N fixers
 Claims: Improves structure, water retention; stimulates decomposition and N fixation
 Remarks: Total fertilizer substitute

Calcium-25

Company: Bio-Gard Agronomics, Inc., P.O. Box 4477, Falls Church, VA 22044
 Ingredients: Calcium mineral supplement
 Claims: Increases yields 20 to 50%
 Remarks: To be used as a foliar spray at 0.05 lb dry material/acre dissolved in 20 gal water for corn; higher rate (0.4 lb/A) for other crops; apparently is the lawn and garden product equivalent of Agro-Lizer

Calfide

Company: Western Soils Co., P.O. Box 2457, Waterloo, IA
 Claims: Neutralizes, breaks up heavy soils, releases soil nutrients, speeds germination, furnishes essential minerals, improves yield
 Remarks: "Nature's own soil conditioners from heart of the Rockies"

CALHUME

Company: Agronics, Inc., 701 Madison St., NE, Albuquerque, NM 87110
 Ingredients: 5-0-0-10 Ca liquid
 Claims: Supplies Ca and increases total nutrient availability
 Remarks: pH 2

Calphos

Company: Thompson Sales Co., P.O. Box 246, Montgomery, AL 36101
 Ingredients: Unacidulated soft phosphate clay, P₂O₅, 18%; CaO, 21%; 16 other elements listed
 Claims: Stimulates early root formation, speeds maturity, encourages earthworms and microorganisms
 Remarks: 2% soluble phosphate

CAL/SPIN

Company: Bio/Syn Research Associates, P.O. Box 451, West Des Moines, IA 50265
 Claims: Releases calcium and other soil nutrients
 Remarks: Liquid antifixation catalyst which separates bound soil calcium

Carbonated Irrigation Water

Remarks: Injection of CO₂ into irrigation lines, multiple times per year
 Known Research: Mauney and Hendrix (1988); Hartze and Holt (1991); Novero et al., 1991); Stofella et al. (1995); Storlie and Heckman (1996)

CARDAK

Company: Car-Dak Inc., Box 1916, Bismark, ND 58502
 Ingredients: No specifics, but is a starch graft copolymer
 Claims: Used as seed coating it improves germination, increases yields, enhances emergence, shortens time to maturity
 Known Research: Grabe et al. (1988)

Catalyst Altered Water (C.A.W.) (See Nature's Nutrients; LA Water Naturalizer, Willard's Water)

Company: C.A.W. Industries, Rapid City, SD
 Ingredients: Unique micelle of altered water with trace minerals from refined lignite
 Claims: Acts as a universal hormone; increases nutrient use efficiency and loosens hard or clayey soils
 Remarks: Apply at 1-2 oz/A
 Known Research: Kelling et al. (1997b)

Cellugest

Company: Bioferm International, 209 Chester Avenue, Moorestown, NJ 08057
 Ingredients: Microbiological complex of cellulose digesting organisms with fluvo-humates and trace elements added; N fixers also present
 Claims: Speeds residue decomposition and makes N available to microorganisms

Charge

Company: Custom Chemicides, P.O. Box 11216, Fresno, CA 93772
 Ingredients: 8-32-56 with zinc, iron, lignosulfonates, and liquid humates
 Claims: Builds a strong root system early, higher yields, and hastens maturity

Chem Crystal

Company: LTL Marketing, Box 167, Castlewood, SD 57223
 Ingredients: Various NPK grades

Chem Free

Company: LTL Marketing, Box 167, Castlewood, SD 57223
 Ingredients: 12-6-6 or 5-10-10 with micronutrients, liquid biological-based fertilizer

Chem Wet Satur-8

Company: LTL Marketing, Box 167, Castlewood, SD 57223
 Ingredients: Spray adjuvant made from coconut oil

Clay Buster

Company: Kingsford Industries Inc., 482 Commissioner's Road, E. London, Ontario N6C 2T8
 Ingredients: Calcium, 21%; sulfur, 16%; sulfates, 46%
 Claims: Breaks up topsoil

Clean Green Plant Food

Company: Tech Ag, Inc., 71912 Nighthawk Trail, P.O. Box 755, McCook, NE 69001
 Ingredients: 34-4-4 and sulfur or 14-30-10 and sulfur, sugar-based fertilizer with trace minerals; also contains biological stimulant
 Claims: 100% water soluble, increased germination and early growth reduces soil compaction, increases aeration
 Remarks: One ton is enough fertilizer for 200 acres

Clean Start

Company: Ag Spectrum Co., P.O. Box 215, 602 First St., Dewitt, IA 52742
 Ingredients: A 8-19-3 fertilizer derived from NH_4OH , nitrogen solution, urea, orthophosphoric acid and KOH
 Claims: "Prepared by a process that improves nutrient availability"
 Remarks: Recommended as row fertilizer at 2-6 gal/A

Clearstart

Company: Clearstart Liquid Fertilizer, RR 1, Box 168, Emery, SD 57332
 Ingredients: Several N, P, K formulations such as 9-18-0 and 3-18-18
 Remarks: Apply 3-5 gal/A

Clodbuster

Company: Farm Guard Products, 701 Madison St., N.E., Albuquerque, NM 87110
 Ingredients: Blended New Mexico humates; humic acids, 15%; humus, 30%; montmorillonite, 5%; silicon dioxide, 5%
 Claims: Soil softener supreme; supplies organic activity
 Remarks: Apparently using the name Fertimax for the program that includes Clodbuster as its base product; appears to be marketing products under company name of Agronics, Inc. with same address

Colloidal Phosphate

Company: Hoover Soil Service, Gilman, IL 60938
 Ingredients: Apparently soft phosphate clay; P_2O_5 , 23.63%; CaO, 25.2%; Al_2O_3 , 16.7%; SiO_2 , 16.8%, and 14 other compounds listed
 Remarks: 70% colloidal material will pass 300-mesh screen

COMO

Company: Stoller Chemical Co., Inc., 8582 Katy Freeway Suite 200, Houston, TX 77024
 Claims: Accelerates nitrogen fixation and use by legumes; makes crops more drought-resistant
 Remarks: Apparently is a cobalt and molybdenum fertilizer

Compo Star

Ingredients: Contains several growth regulators and cultures of bacteria, fungi, and actinomycetes
 Remarks: Apparently an inoculant for compost systems

Concept Fish

Company: Ag Connection Sales, Inc., RR 1, Box 86A, Seneca, KS 66538
 Ingredients: Soluble fish fertilizer

Concern (See AgriKey)**Consolime**

Company: Consolidated Papers, Inc., Wisconsin Rapids, WI
 Ingredients: A papermill lime sludge of colloidal calcium carbonate

Controlled pH Liquid Fertilizer

Company: Advanced Prescription Fertilizer, Inc., 45602 282nd St., Suite #1, Hurley, SD 57036
 Ingredients: 24-0-0-4
 Claims: Nutrients more available to plants; does not increase pH of soil

Coron

Ingredients: Apparently a PGR
 Known Research: Henninger (2000)

Cosmo Fertilizer

Company: Thomas Heath Enterprises, 527 W. Highland Avenue, Tracy, CA 95376
 Ingredients: N, 4.9%; P₂O₅, 5.1%; K₂O, 5.5%; trace amounts of Zn, Fe, Mn, Cu, and Ca
 Remarks: Recommended rate, one drop per gallon of water

Crop+ (See Cytozyme)**Crop Booster**

Ingredients: Hydrolyzed fish with the possible addition of other organic products and inorganic nutrients
 Known Research: Edmeades (2002)

Crop Booster

Company: Agriliance, Inver Grove Heights, MN
 Ingredients: Foliar micronutrient fertilizer containing Mn (3.2%), Zn (2.1%), Fe (0.3%), B (0.2%), and Mo (0.01%)
 Remarks: Primarily recommended for soybeans at 1-2 qt/A
 Known Research: Gerwing et al. (2002)

Crop Life

Company: Polymer Technologies, Inc., P.O. Box 568, Nocatee, FL 33864
 Claims: Helps protect plants against heat, drought, frost, insects, and disease
 Remarks: Apparently is an acrylic polymer for spraying on plant foliage

Crop Plus

Company: Ag Connection Inc., 2212 N. 33rd Terrace, St. Joseph, MO 64505
 Ingredients: Stabilized natural biochemical product containing adenine, indolebutyric acid, indoleacetic acid, gibberellins and “innumerable” enzymes, coenzymes, vitamins, hormones, amino acids, etc.
 Claims: Increases fertilizer efficiency, residue decomposition, ease of tillage, water absorption, retention and drainage, reduces risk from stress, increases germination, yields and quality
 Remarks: Apply at 1 gal/10 acres; called a Biological Growth Activator; similar phraseology in advertising to that used by Agro Plus

CROP Prod

Company: PROD Inc., P.O. Box 9272, Moscow, ID 83843
 Ingredients: 3.5-3.5-3.5
 Remarks: Apply foliarly at 8.5- 13 oz/A once or twice

Crop Residue Digestor

Company: Bio/Syn Research Associates, Inc., P.O. Box 451, West Des Moines, IA 50265
 Ingredients: Contains a mix of “microorganisms, trace elements, and ancillary growth factors,” including mutant strains of N fixers
 Claims: Helps digest crop residues and fixes nitrogen (20-80 lb N/A)
 Remarks: Use 4 oz/A

Crop-Set

Company: Improcrop USA, 3031 Catnip Hill Pike, Nicholasville, KY 40356
 Ingredients: *Lactobacillus* fermentation product that contains micronutrients and vitamins
 Claims: Improves quality, increases yield
 Known Research: Karnezos et al. (1998); Giles and Cattanach (2001b)

Culbac (Possible alternative names: Fermalizer; Ferma-gro)

Company: Trans Agra International, 101 Hansen Rd., Box 68, Storm Lake, IA 50588
 Ingredients: Culture of *Lactobacillus acidophilus* on whey and Norwegian kelp extract base
 Claims: Increases root development, stress tolerance, emergence, stands and yields; increases crop use of fertilizer
 Remarks: Growth promoting compounds have been suggested; sold as seed treatment or foliar spray
 Known Research: Overdahl (1976); Oplinger (1977); Kelling and Weis (1978); Oplinger et al. (1978); Kelling et al. (1979, 1980); Edmeades (2002)

Cytex

Company: Atlantic & Pacific Res. Inc., Box 14545, N. Palm Beach, FL 33408
 Ingredients: A natural growth regulator containing a mixture of cytokinins and seaweed extracts
 Claims: Labeled for use on tomatoes and Florida oranges to increase size and yield of fruit
 Remarks: Plant growth regulator registered by EPA; use is primarily limited to horticultural crops at present time
 Known Research: Murphy (1979); Weis (1979, 1980); Kelling et al. (1980); Edmeades (2002)

Cytozyme (Have several products including Crop+, Stubble Digestor+, Seed+ Treatment+, and Soil+)

Company: Cytozyme Laboratories, Inc., 134 South 700 West, Salt Lake City, UT 84104
 Ingredients: Derived from marine algae and contains cytokinins and various micronutrients including Cu, Fe, Mn, Zn, Me, and B
 Claims: Claims vary with product but include activation of soil enzyme systems; increases nutrient retention, speed decomposition; increased stress resistance, lusher growth, increased yields
 Remarks: Cytokinin stimulated growth
 Known Research: Kelling et al. (1980); Cothren and Cotterman (1981); Ryan et al. (1982); Wolkowski et al. (1985b); Edmeades (2002)

DCD

Company: Produced by SKW Trostberg and apparently Cyanamid of Canada
 Ingredients: Dicyandiamide
 Claims: Blocks nitrification reaction
 Remarks: Appears to be about as effective as nitropryrin (N-Serve)
 Known Research: Communications in Soil Science and Plant Analysis (1989, #19 and 20 whole

issue); Kelling and Wolkowski (1989); Malser et al. (1989)

Denny's Best Fertilizer:

Claims: Builds soil humus and reduces plant water requirements
 Remarks: Apply at 150 lb/A

Desert Bloom

Company: Hydra-Soil International, P.O. Box 911, Kingfisher, OK 73750
 Claims: Reduces evaporation moisture loss; reduces leaching and runoff

Dinoseb (Also known as PREMERGE, Spark, DNBP)

Ingredients: 2-sec-butyl-4,6 dinitrophenol
 Remarks: Plant growth regulator
 Known Research: Hatley et al. (1974); Ohlrogge (1974); Ohlrogge (1977); Oplinger and Bosabe (1977); Benson and Anderson (1978); Johnson et al. (1978); Oplinger (1978); Hicks et al. (1979); Ohlrogge et al. (1980); Regehr (1982)

Double-X40

Company: Florentine Products Group, Memphis, TN
 Ingredients: 15-15-5-5S with micronutrients
 Claims: Increases plant ability to withstand stress
 Remarks: Apply 1.5 to 2.0 pt/A for corn at 4-5 leaf stage; advertised as an "auxiliary nutrient compound"

Drammatic Organic Liquid Fish

Company: Dramm Corp., 2000 North 18th St., P.O. Box 19600, Manitowoc, WI 54221-1960
 Ingredients: Several fish hydrolysate-based fertilizers, some containing kelp
 Claims: Improves yield and quality; increases soil microbes, plant germination, and storage life

Early Bird Soil Conditioner

Company: Steakmate Corp., Morgan Hill, CA 95037
 Ingredients: Apparently is a source of stabilized organic material
 Claims: Better rooting environment
 Remarks: Mixed with lawn and garden soil for better physical condition

Early Harvest PGR

Company: Griffin Corp., Valdosta, GA 31601
 Ingredients: 0.09% cytokinins, 0.03% gibberellic acid, and 0.045% indole butyric acid
 Claims: Improves crop yield and quality
 Remarks: Apply at 3.2 oz/A
 Known Research: Henniner (1999; 2000); Kelling and Speth (2000a; 2001)

Earthbound and Earthbound L (See Soil Pam)**Earthgreen** (See Menefee Humate)**Earthworm 2001** (Possible alternative name: NEF Complex 20 SL)

Company: Sarantakos Laboratories, Sherman, TX 75090
 Ingredients: Thermoactinoraye, Azotobacter, Lactobacter, *B. sabitillis*, select other coliform with a coferment containing amino acids, enzymes and a variety of other compounds

Claims: Increases soil microbial activity; reduces crusting and clodding; increases water penetration; reduces alkalinity and readjusts pH; builds humus; increases efficiency of fertilization; improves foliage; improves root crops; reduce need for insecticides and fertilizers

Remarks: All natural and non-toxic soil activator and conditioner; identical ingredient description to NEF Complex 20SL

Echol West (Several products including Seed Starter Foliar Spray 1 and 2; Micronized Landplaster)

Company: Echol West Inc., Pocatello, ID 83201

Ingredients: Generally contain some K₂O, 1-4% and sulfur, 15-50%; along with several other elements including Ca, Mg, Zn, Fe, Mn, or B

Remarks: Supplemental minor element fertilizer; recommended treatments at 5-10 lbs/A

Eco Crop Booster

Company: ECO Soil and Water Corp., Box 206, Hickman, NE 68372

Ingredients: Micronutrient mixture for foliar feeding (0.025% B, 0.0009% Co, 0.4% Cu, 0.4% Fe, 0.4% Mn, 0.008% Mo, 0.4% Zn)

Eco-Gro (Possible alternative names: Sunrane, Green World, or Bountiful 8-8-8)

Company: Carpole's Inc., Box 32, Garfield, MN 56331

Ingredients: Fortified fish and seaweed fertilizer 8-4-4

Claims: Provides nutrients and hormones, relieves stress, increases yields

Remarks: Contains 6 lb fish per gallon with 4% seaweed added; recommended rate 1 qt/A foliarly applied twice; may be similar to Sunrane

Known Research: Evans and Nelson (1979); Evans and Nelson (1980)

Ecological Products Soil Conditioner

Company: Ecological Products LTD, Des Moines, IA

Ingredients: Leonardite

Remarks: Apply 200-1000 lb/A, depending on crop

Econo 20-30-20

Company: Nu-Grain Systems Inc., Rt. 3, Box 412, Lake Geneva, WI 53147

Ingredients: A 20-30-20 fertilizer

Claims: Total fertilizer needs for corn is 5-8 lb/A plus nitrogen

Known Research: Contract research study with Prompt and Precise Labs., Oshkosh, WI

Eco-Soil-Life Soil Conditioner

Company: Eco-Soil and Water Corp., Box 206, Hickman, NE 68374

Ingredients: 50% ammonium laureth sulfate, 5.5% liquified sea kelp, 10% cultured whey extract, 15% conc. molasses, 1.36% CuEDTA, 2% FeHEDTA, 1.69% MnEDTA, 1.22% ZnEDTA, 13.23% water

Remarks: Apply at 4 oz/A

Eco-Systems Plant Food and Soil Conditioner

Company: N&M Services, Inc., 2011 NE 58th Avenue, Des Moines, IA 50313
 Ingredients: 0-2-2 with Ca, 6%; Mg, 2%; S, 1%
 Remarks: Applied at 100-300 lb/A banded in row

EC&S Bio-Stimulant, Fulvic Electrolyte, Liquid Compost

Company: Enviro Consultant Service, LLC, P.O. Box 1749, Evergreen, CO 80437 (also marketed through Bachmann Inc., West Des Moines, IA)
 Ingredients: Bio-stimulant contains enzymes, coenzymes, exoenzymes; Liquid Compost 75% apple cider vinegar and humic acid and 25% glucose substances
 Claims: Stimulates microbes and plant hormone production; improves soil physical conditions; higher yields; less erosion and compaction
 Remarks: Recommended at 4-32 oz/A

EC&S More-N

Company: Enviro Consultant Service, LLC, P.O. Box 1749, Evergreen, CO 80437 (also marketed through Bachmann Inc., West Des Moines, IA)
 Claims: Can replace up to 120 lb N
 Remarks: Directions state to be mixed with Bio-Stimulant and Super Liquid Compost; minimum application of 3-5 gallons mixture per acre

Embark

Company: 3M Agricultural Products
 Ingredients: Mefluidide
 Claims: Plant growth regulator that slows grass growth and keeps from seeding
 Remarks: Expected use is on pastures

Enagizer

Company: Agratronix, Inc., 2713 Harding Road, Des Moines, IA 50310
 Claims: Earlier planting, faster germination, improved emergence, better roots, increased yields
 Remarks: Applies electromagnetic energy to seed
 Known Research: Otto et al. (1975); Swearingin, cited in Overdahl (1976)

Energizer Liquid Humus

Company: Organic Laboratories Inc., 5050 Westheimer Road, Houston, TX 77027
 Ingredients: Humic acid, 83%; derived from Leonardite
 Claims: Better root system; improves fertilization results; improves disease resistance; loosens tight soil

Enersol

Company: American Colloid Co., 1500 W. Shure Dr., Arlington Heights, IL 60004
 Ingredients: 15% humic acid and humic-acid based (3%) fertilizers fortified with nutrients (6-14-4) or micronutrients; derived from North Dakota leonardite
 Known Research: Weis (1986)

Enersol SC

Company: American Colloid Co. Agricultural Group, 1500 W. Shure Dr., Arlington Heights, IL 60004
 Ingredients: Humic acid (65%)
 Claims: Improves yields and quality
 Remarks: Broadcast at 1-2 lb/A

Enhance

Company: National Ag Products Development, Inc., 1235 100th Street SE, Byron Center, MI 49315
 Remarks: Multipurpose spray adjuvant

ENKAMIC

Company: Pharmco Laboratories Inc. for Aglink, Inc., Box 997, Alexandria, MN 56308
 Ingredients: 24-0-3 derived from NH_4NO_3 and KNO_3 with micronutrients (1% Fe, 2% Mn, 0.08% Cu, 0.02% B, 0.08% Zn, 2.5% S)
 Claims: Increases photosynthesis and plant metabolism; stimulates root development
 Remarks: Apply at 1 lb/A at 6-leaf stage for corn.

Enliven

Company: Enliven Ag-Aid Products, Inc., P.O. Box 7147, Monroe, LA 71203
 Ingredients: Culture of *Lactobacillus acidophilus* with minor elements added
 Remarks: Used as seed treatment for several crops

ENSAVE (XL)

Company: En-Save Inc., 301 South 3rd St., Box 607, Grimes, IA 50111
 Ingredients: Organically complexed secondary and micronutrients, proteins, protein hydrolyzates, peptides and amino acids, organic acids, diatomaceous earth
 Claims: Stronger, healthier plants; better stands; reduced lodging
 Remarks: Use as seed treatment at 2 oz/A

Envy

Company: National Liquid Fertilizer Corp., Chicago, IL
 Ingredients: Is a 20-20-20 fertilizer made with urea, ammonium phosphate and potassium nitrate
 Remarks: Apply foliarly to agronomic crops at 20 lb/A mixed with water

eN-ZONE

Company: Enviro Consultant Service, LLC, P.O. Box 1749, Evergreen, CO 80437 (also marketed through Bachmann Inc., West Des Moines, IA)
 Ingredients: Multi-species of encapsulated nitrogen fixing bacteria
 Claims: Can replace up to 120 lb N

Enzyme Soil Activator

Company: Conservation Chemistry Corp., 112 W. Wyoming Avenue, Las Vegas, NV 89102
 Ingredients: Broad spectrum of enzyme preparations
 Claims: Higher yields, increase soil microbes, more efficient fertilizer use
 Remarks: Appears similar to Natur-All One-Step

Eokomit

Company: Frederick E. Palmer & Co., P.O. Box 261, Stn. "L", Montreal, Quebec, Canada
 Ingredients: Apparently is a microbial complex
 Claims: Increased yields
 Remarks: Used as seed treatment and with watering

Epsogrow

Company: Kali and Salz, GmbH, Germany
 Ingredients: 100% epsom salt
 Claims: Enhances crop yield and quality
 Known Research: Khan et al. (2000b); Khan et al. (2001)

Ergostim, Ergistim

Company: Montedison USA, Inc.
 Ingredients: Thrazolidin-4-carboxylic acid, 5%; folic acid, 0.1%
 Remarks: Plant growth regulator
 Known Research: Oplinger et al. (1978); Weis (1980); Gupta and MacLeod (1984)

Erth-rite

Company: Zook and Ranck Inc., R#1, Gap, PA 17527
 Ingredients: Composted conditioner with animal, mineral, plant and sea products with essential earth-conditioning bacteria
 Claims: Inoculates the soil, stimulates N fixation, speeds decomposition, reduces insect infestations
 Remarks: 400-1200 lb/A for field crops

Essential

Company: Growth Products, White Plains, NY
 Ingredients: Humic acid, plant extracts, kelp extracts, sugars, hydrolyzed organic proteins, and wetting agents
 Claims: Improves root growth and P utilization by plants
 Remarks: A biostimulant
 Known Research: Heckman (1995)

Extend (Possible alternative names: Slo-go, SRC 101)

Company: Kalo Laboratories Inc., Kansas City, MO 64114
 Ingredients: Alkylene ethersulfate, aromatic sulfonate, polyhydric alcohol and aliphatic solvents, 43.2%
 Claims: Increases N efficiency
 Remarks: "Encapsulates" nitrogen to keep from loss; recently claimed to increase the rate N diffuses to zone of root absorption
 Known Research: Vitosh and Hyde (1977); Herron and Witt (1978b); Lilly (1978); Malzer (1978); Missouri (1978b); Peterson (1978); Raines (1978); Randall (1978); Herron (1979); Keeney et al. (1979)

FCI Power Unit

Company: Town and Country Water Systems, Midland, MI
 Ingredients: Magnets that attach to sprayers or planters
 Claims: Improves herbicide effectiveness, improves fertilizer distribution

Feast

Company: Conklin Company, Inc., Valley Park Dr. & Hwy. 101, Shakopee, MN 55379
 Ingredients: Low biuret urea, aqua ammonia, white phosphoric acid, potassium hydroxide; three primary grades are 9-18-9, 3-18-18, and 16-4-4; also have micronutrient formulations
 Claims: Increases yields, aids in root development
 Known Research: Penas (1983); Hall et al. (2002)

Feiyuan

Ingredients: A biological inoculant
 Claims: Improves N use efficiency
 Known Research: Lamond et al. (1997c)

Fermalizer (See Culbac)**Fertidyne**

Company: IBC Research Lab. Inc., 16 W. 61 Street, New York, NY 10023
 Claims: Increased nutrient availability and yields
 Remarks: Acts as a bacterial stimulant
 Known Research: Mick (1961)

Fertilaid

Company: Apparently taken over by MicroKey Sciences, Inc., 9700 Richmond Ave., Suite 140, Houston, TX 77042
 Ingredients: Nitrogen, 6%; organic matter, 40%; with 24 trace elements
 Claims: Nutrient source and activator
 Remarks: 300-2000 lb/A for field crops; not clear if this is also marketed as AgriKey
 Known Research: South Dakota (1961); Herron and Witt (1978b)

Fertilife

Company: Chicago Stock Yards Compost Co., Union Stock Yards, Chicago IL 60609
 Ingredients: Organic compost
 Claims: Nutrient source and organic conditioner

Ferti-Lite

Company: DIAD Agricultural Services, Ltd., 3106 9th Ave. N, P.O. Box 1777, Lethbridge, Alberta, Canada, T1J 4K4
 Claims: Slows nitrification; reduces N volatilization from vegetables; increases P availability and helps reclaim saline and alkali soils
 Remarks: Apparently releases H₂SO₄ when put in contact with water

Fertilium

Company: Soil-tone Corp., Plymouth, NC 27962
 Ingredients: Apparently is an organic decomposition product containing organisms and hormones
 Claims: Supplies all needed nutrients, improves structure, inoculates soil with N fixers and decomposers, stimulates growth
 Remarks: 1-2 T/A worked into soil for field crops

Fertimax

Remarks: This is the overall fertility management program as recommended by Farm Guard Products and/or AGronics Inc. (See Clodbuster and Actival)

Fish-Agra

Company: Northeast Organics, Box 7, Beaver Dam Rd., Manchester-by-the-Sea, MA 01944
 Ingredients: Concentrated organic fish hydrolysate, 4-1-1
 Claims: Increases crop yield; stimulates microbes; increases fruit set; reduces stress
 Known Research: Kelling and Speth (2000b)

Fish Brand Fertilizer

Company: Mark 21, Inc., P.O. Box 132, Sioux Falls, SD
 Ingredients: 8-8-5 derived from fish, phosphoric acid, urea and KCl
 Remarks: Apply 1.5 qt/A to corn at 4-8 inches and 2 weeks pretassel

Floramate

Bio-Line, Inc., 9201 Penn Ave. South, Suite 26, Minneapolis, MN 55431
 Ingredients: Humate product derived from leonardite supplemented with 6 types of seaweed, a catalyst and a fatty acid polymer surfactant
 Claims: Better plant growth; increased plant sugar and protein

Flora-Stim

Company: Kountry Marketing International, Hawkins, TX 75765
 Ingredients: Contains B, 0.02%; Co, 0.0028%; Cu, 0.25%; Fe, 2.5%; Mn, 0.24%; Mo, 0.0005%; and Zn, 0.48%
 Claims: Stimulates microbial activity, enhances disease resistance, increases quality and yields
 Remarks: Micronutrient fertilizer used at 200 lb/A

Floratine

Company: ATS Research Inc., 5050 Poplar Ave., Suite 1722, Memphis, TN 38157
 Remarks: Apparently related to ADDAMAX, Double, and RADIX

Flourish

Company: National Ag Products Development Inc., 1235 100th Street SE, Byron Center, MI 49315
 Ingredients: 10-5-5 with micronutrients and cytokinins
 Remarks: A fortified fish and seaweed fertilizer; apply 2-3 gal/A in row and 1 qt/A foliar

Foliafeed

Company: Atlantic and Pacific Research Inc., P.O. Box 14366, N. Palm Beach, FL 33408
 Ingredients: Synergistic blend of fish solubles and liquid seaweed, 2.0-0.7-1.0 with small amounts of secondary and trace elements
 Remarks: 1/3 to 1/2 gal/A for field crops

Folian

Company: Allied Chemical Corp. (now Honeywell), Box 131, Hopewell, VA 23860
 Ingredients: 12-4-4 with 0.5% S
 Claims: Increases yields and improves quality of vegetables
 Remarks: Rain within 48 hrs after application will reduce the effectiveness of Folian
 Known Research: Herron (1979)

Foliar Plus

Company: ProfitPro, LLC, 703 Marshall St., Albert Lea, MN 56007

Ingredients: Foliar spray 2-3-2

Claims: Improves plant vigor and pod set and seed fill on beans; larger ear girth and length on corn; better quality and re-growth on alfalfa

Foliar Spray (See IAT Foliar Spray)**Foliar X-Cyto**

Company: Conklin Company, Inc., Shakopee, MN

Remarks: Apply at 8 oz/A at green-up and after each cutting for alfalfa

Known Research: Hall et al. (2002)

Folicote

Company: Aquatrols Corp. Amer., 1432 Union Avenue, Pennsauken, NJ 08110

Ingredients: Refined wax emulsifiers and preservatives

Claims: Reduces water stress

Remarks: Transpiration minimizer

FOLI-ZYME

Company: Stoller Chemical Co., Inc., 8582 Katy Freeway, Suite 200, Houston, TX 77024

Ingredients: 15-2-0 with 3% Ca derived from urea phosphate, calcium monocarbamide and N-Hib Ca

Claims: Aids root growth, yield and quality

Remarks: Apply 0.5 gal/A every 10-14 days from 2-3 leaf stage to maturity, later sprays at 1-2 gal/A

Known Research: Hall et al. (2002)

Fol-R Foliar Spray

Company: Dionne Products, 1505 North Avenue, Norwalk, IA 50211

Ingredients: Contains high molecular weight proteins with Cu, 0.26%; Fe, 0.23%; Mn, 0.32%; and Zn, 0.33%

Claims: Stimulates growth, increases stress resistance, better quality and crop yields, increased flavor and protein content

Remarks: Diluted 1:100 and misted on plants averaging 4 to 6 oz/A

Formula 181

Company: C&E Products Inc., Rt. 3, LeMars, IA 51031

Ingredients: Trace minerals including Zn, Cu, Fe, Mn all at 0.4%; B, 0.025%; Co, 0.0009%; Mo, 0.0008%

Remarks: Dilute 1:39 and mist 1/2 gal/A of mixture

Formula 7040

Company: Recess Industries Inc., Box 2037, Falls Church, VA 22042

Claims: Higher yields and disease and drought resistance, less runoff, faster germination and initial crop growth

Remarks: Apparently is a wetting agent which influences surface tension

Known Research: Vitosh and Hyde (1977); Sunderman (1978); Lawless et al. (1981); Sunderman (1983)

Formula 7052X

Company: Recess Industries Inc., Box 2037, Falls Church, VA 22042
 Remarks: Experimental product apparently similar to 7040
 Known Research: Lawless et al. (1981); Sunderman (1983)

Fortify

Company: Western Sunburst Inc., 906 Carpenter Road, Suite C, Modesto, CA 95351
 Ingredients: A 8-16-4 foliar macronutrient spray

Fortune

Company: Greater Yields International, P.O. Box 280, Verona, MS 38879
 Ingredients: 0-40-40 + 1.5 S
 Remarks: Use foliarly; supplement to normal fertilization

Foundation RM

Company: Custom Chemicides, P.O. Box 11216, Fresno, CA 93772
 Ingredients: Seaweed, humus, natural chelators, carbohydrates, and cytokinins
 Claims: Promotes plant growth; helps build soil organic matter

Fulcrum

Company: Cargill Inc., P.O. Box 725, Elk River, MN 55330
 Ingredients: (1-3-2) molasses-based fertilizer
 Claims: Increases crop yield and quality
 Known Research: Rosen and Birong (1998); Rosen et al. (1999); Kelling and Speth (2000a)

Full and Lush

Company: TransNational Agronomy LTD, 470 Market Street SW, Suite 101, Grand Rapids, MI 49503
 Ingredients: Fortified fish and seaweed fertilizers with grades such as 10-8-8 and 6-14-6

Fulvic Electrolyte (See EC&S Bio-Stimulant)**Fung-AID**

Company: Stoller Chemical Co., 8285 Katy Freeway, Suite 200, Houston, TX 77024
 Ingredients: 10% Ca and 0.5% B derived from calcium sucrose and sodium borate
 Claims: Increases disease resistance
 Remarks: Used as supplement to fungicide sprays (tank mixed)

Genesis II (See Agralife)

Known Research: Hileman (1976); Illinois (1977); Brian (1978); Lilly (1978); Weaver (1979); Tiedemann et al. (1980)

Genesis Soil Rite

Company: Frontier Labs, Inc., P.O. Box 474, Brandon, SD 57005
 Ingredients: Calcium, 22.56%; boron, 0.305: derived from sugars, lime, and blend of herbs and spices
 Known Research: Khan and Nelson (2004)

Germ 'N Boost

- Company: Bio/Syn Research Assoc., P.O. Box 451, West Des Moines, IA 50265
 Ingredients: Contains three types of bacteria: (1) N fixers; (2) decomposers; (3) enzyme formers with trace elements added
 Claims: Faster germination, reduces heat units needed for maturity, increases stress resistance, increases yields and quality
 Remarks: Used as seed treatment; sometimes uses Harvest-Mor as prefix in name

Glacial Grow

- Ingredients: Appears to be ground granite with 15 elements listed as being present as oxides or dioxides including Si, 32.1%; Fe, 1.2%; and Al, 14.5%
 Claims: Stronger roots, less prone to shock, promotes N fixation, provides balanced diet

Glorion

- Company: Soil Builders International Corp., 33 W. 42nd Street, New York, NY
 Ingredients: 4-8-8 in a carbon base with 15 trace elements
 Claims: Makes fertile soil out of sand and clays; fertilizer substitute
 Remarks: This is apparently a decomposition product

Goemar

- Ingredients: Auxins, cytokinins, gibberellins, 18 amino acids and 7 vitamins derived from seaweed
 Known Research: Kelling (1991); Edmeades (2002)

Golden Bio

- Company: Golden Bio, Inc., Box 171, Concordia, MO 64020
 Ingredients: Contains unspecified amounts of humic acid
 Claims: Stimulates soil microbes; reduces germination time; increases available P, pH, organic matter and base saturation; improves soil texture; increases yields
 Remarks: Biological growth activator with humic acid

Golden Cal

- Company: Golden Plant Food, Ltd., Box 171, Concordia, MO 64020
 Ingredients: Apparently contains glucoheptonic acid derived from natural sugar with nitrate nitrogen and calcium
 Claims: "Designed to help gain access to soil calcium"
 Remarks: Indicates 1-gallon equivalent to need for 500 lb/A CaCO₃

Golden Plant Food

- Company: Golden Plant Food, Ltd., Box 171, Concordia, MO 64020
 Ingredients: Variety of fertilizer grades including 9-18-9, 3-18-18, 10-10-10 and 16-8-8
 Remarks: Non-toxic, non-corrosive fertilizer

Golden X Soil Culture

- Company: Southern Biochemical Corp., 2077 W. Wheeler Street, Drawer 1040, Aransas Pass, TX 78336
 Ingredients: Strain of naturally occurring soil organisms (asymbiotic N fixer, *Aspergillus oryzae*)
 Claims: Stimulates germination and root development and reduces need for fertilizer
 Remarks: Applied as seed coat (1 cup/bu) or root dust; no specific organism identified
 Known Research: Grabe et al. (1988)

GoldStart

Company: Nutra-Flo Co., 1919 Grand Ave., Sioux City, IA 51106-5708

Claims: Young seedlings can emerge stronger; plants move quickly through vegetative stage, they mature faster

Remarks: Diamond is 100% orthophosphate while GoldStart is “high” in orthophosphates

Granite (Generic ground rock)

Claims: Source of K and other nutrients

Known Research: Coroneos et al. (1996); Hinsinger et al. (1996)

Gran-Life Rock Dust

Company: Gran-Life Products, Rt. 4, Box 210, Long Prairie, MN 56347

Claims: Stimulates microbe and plant growth; “enhances electromagnetic properties which stimulate soil fertility;” improves pest resistance

Remarks: “A living rock dust which reestablishes the polarity of soils”

Greenbelt 66

Company: Ness Environmental, 4305 North Garfield, Suite 237, Midland, TX 79705

Ingredients: Naturally occurring humate

Claims: Returns nutrients to soil; activates soil organisms; increases soil moisture holding capacity

Green Magic

Company: Agro Chem Inc., 11150 Addison, Franklin Park, IL 60131

Ingredients: 20-0-2 from KNO_3 , urea, NH_4NO_3 and K_2SO_4 with small amounts of micronutrients from hemlock bark extract plus other poly organic complexes

Claims: Complete feeding program for lawns

Remarks: Apply 1 gallon to 2500 ft² and repeat every 6 weeks

Greensand

Ingredients: Mined sand-sized particles of glauconite containing up to 8.6% K_2O and traces of other nutrients

Claims: Source of K, improves soil moisture and nutrient holding capacity

Known Research: Tedrow (2002); Heckman and Tedrow (2004)

Greenworld

Company: Greenworld Products Corporation, 401 N. 3rd St., 676 Designes Guild Place, Minneapolis, MN 55401

Ingredients: 8-8-8 foliar fertilizer with fish and seaweed; derived from fish, seaweed, phosphoric acid, KOH, and urea

Claims: Increased yields; more efficient nutrient use; accelerates photosynthetic activity; increases disease and insect resistance

Remarks: According to company representative, this company bought out Carpole’s Inc. Apply at 1 qt/A 7-10 days before tasseling for corn; other crops at similar rate

Known Research: Farber (1993); Kelling (1993)

Gringo

Company: Iron Products Inc., P.O. Box Drawer 1236, 461 11th Street, Douglas, AZ 85607

Ingredients: Derived from ferrous sulfate and other sulfates (Fe, 4.5%; S, 4.5%) with small amounts of Mg, Mn, Zn, and Cu

Claims: Higher yield, germination, and quality; faster maturity; increases nutrient availability

Remarks: pH 2-4; applied at about 7 gal/A

Gro-Coat

Company: Custom Chemicides, P.O. Bxo 11216, Fresno, CA 93772
 Ingredients: 2% S, 2% Mn, 2% Zn, 0.005% Mo in organic complex
 Claims: Improves the soil for germinating seeds by coating the seeds with nutrients
 Remarks: Intended as a seed treatment at 3-6 oz/A

Gro-Green

Company: H.D. Campbell Co., Rochelle, IL 61068
 Ingredients: Several formulations of macro- and micronutrient mixtures including 9-18-9, 20-20-20, and 20-30-10, with Mg, Fe, S, Cu, Zn, Co, Mo, Mn, and B
 Claims: Sprouts faster, higher yields, better roots, retards wilting
 Remarks: All are 100% soluble; program for corn calls for 50 lbs/A of 20-30-10 as total fertilizer program

Gromor (See Pennasoil)**Growers**

Company: Growers Nutritional Solutions, Milan, OH
 Remarks: Apply at 2 gal/A at green up and 2 days after each cutting for alfalfa mixed with 0.2 gal/A vinegar
 Known Research: Hall et al. (2002)

Growmor

Company: Growmor Chemicals, Ltd., Box 321, London, Ontario, Canada
 Ingredients: 7-14-7 with Mg, S, Co, Fe, Mn, B, Cu, Zn, Mo and vitamin B1; also available as a 9-18-9
 Claims: Higher yields and better quality, germination and root system
 Remarks: Corn program calls for 5 gal/A with seed and 3 gal/A foliar sprayed twice

GroZyme (Also identified as Z93; label identical to Lescozyme; see AgroPlus)

Company: Manufactured by AgroPlus Inc., P.O. Drawer J, Hawkins, TX; distributed by Ag Spectrum Co., P.O. Box 215, 602 First St., DeWitt, IA 52742
 Ingredients: Ferment product from sugar, molasses, malt, yeast, and kelp with advertised amounts of micronutrients (0.02% B, 0.0005% Co, 0.05% Cu, 0.10% Fe, 0.05% Mn, 0.0005% Mo, 0.05% Zn). Draft label also shows 0.001% adenine, 0.0005% indolebutyric acid and 0.0005% indoleacetic acid. Another company (Enzyme Industries, Lima, OH) using product name Grozyme also lists 5.5% sodium tetradicyl sulfate, conylphenyl polyglylene glycol, and ether with the ferment
 Claims: Increases soil microbial populations and their activity; mobilizes nitrogen found in soil organic matter; enhances root growth; prevents denitrification and nitrogen conversion; increases yields; decreases the need for nitrogen fertilizer
 Remarks: Use 12.5 oz/A; company literature indicates it is a second-generation product of AgroPlus
 Known Research: Rice and Lamond (1990a; 1990b; 1991); Edmeades (2002)

Guardian (See DCD)

Company: Conklin Co., Inc., 551 Valley Park Dr., Shakopee, MN 55379
 Ingredients: 66% nitrogen from dicyandiamide
 Claims: Nitrification inhibitor
 Remarks: Use 2-3 lb/10 gal nitrogen fertilizer solution; not to exceed 8-10 lb Guardian/A; 3-4 lb/10 gal with broadcast applications; SKW Trostburg has marketing agreement with Conklin

Guardian Adjuvant

Company: J and J AgriProducts and Services, Inc., 220 S. Second St., Dillsburg, PA 17019

Gulf Menhaden Condensed Fish Solubles (See Liquid Fish)**H Plus** (Alternative name: Formula 181)

Company: C&E Products, Box 182A, RR3, LeMars, IA 51031

Ingredients: Same guaranteed analysis as Formula 181 except ingredients also list kelp, dried whey, lactic acid and molasses

Remarks: Rate for corn 1 gal/40 A

Known Research: Kansas (1975a; 1975b; 1976)

Harvest-Mor (Is apparently the line of products that includes Crop Residue Digester, CAL/SPIN, Soak 'N Store, Germ 'N Boost, Stress-Plus, and Sun-Net Spray; see individual product for more information)

Company: Bio/Syn Research Associates, 1005 32nd St., West Des Moines, IA 50265

Harvest Plus

Company: Stoller Chemical Co. Inc., 8582 Katy Freeway, Suite 200, Houston, TX 77024

Ingredients: A 14-4-6 fertilizer with Mg 2%, S 5%, B 0.1%, Cu 0.1%, Fe 1.5%, Mn 2%, Mo 0.02%, and Zn 2%

Claims: Designed to prevent nutrient deficiencies

Remarks: For field crops apply 1 qt/A at 4-leaf stage and 0.5 gal/A every 14 days thereafter until maturity; designed to supplement soil applied fertilizer

Herman 2

Company: Taino Technology and Technique, Inc., S 12102 Andrus Rd., Rt. 2, Box 286, Cheney, WA 99004

Claims: Designed to accelerate digestion of crop residues

Remarks: Sprayed at 50 g/A; not to be used on turf

High-NRG N

Company: Agro Culture, 3026 W. M-21, P.O. Box 150, St. Johns, MI 48879

Ingredients: 27-0-0 with sulfur and iron

Claims: Higher efficiency of use than conventional N fertilizers; can use 40% less N

HI-ZYME

Company: Electrozyme Corp., P.O. Box 831, Elkhart, IN 46514

Ingredients: Organic matter, 7.16%; N, 0.08%; S, 0.011%; P, 0.011%; K, 0.055%; and small amounts of Mg, Ca, Na, Fe, Al, Mn, B, Cu, and Zn

Claims: Flocculation of soil, free movement of moisture, increase nutrient availability, better root penetration, greater water retention

Remarks: Termed a stabilized enzyme process

Hoover's Organic Blend

Company: Hoover Soil Service, Gilman, IL 60938

Ingredients: Apparently an organic soil conditioner

Claims: Neutralizes soil; improves quality; increases yields; holds nutrients, promotes microorganisms

HOP Soil Conditioner

Company: Humus Organic Products Inc., Box 105, Hampton, IA 50441
 Ingredients: Humus

Humabase

Company: MVV Inc., 1670 E. 1300 Street, Salt Lake City, UT 84105
 Ingredients: Humic acid, 15%; humus, 30%

Humaide

Company: Ag Connection Sales, Inc., R.R. 1, Box 86A, Seneca, KS 66538
 Ingredients: Humic acids derived from leonardite ore
 Claims: Increases uptake of nutrients by plants

Humate (Possible alternative name: Humite)

Ingredients: Granular mined organic deposit
 Remarks: 250-500 lb/A for field crops
 Known Research: Bauder (1976); Lee and Bartlett (1976); Frank and Anderson (1978);
 Lawless et al. (1981)

HuMate

Company: Medina Agriculture Products Co. Inc., P.O. Box 309, Hondo, TX 78861
 Ingredients: Humic acid concentrate 12%
 Claims: Makes phosphate and iron more available; chelates metals; stimulates roots, germination; buffers salts; reduces burning, aids in rapid translocation of nutrients
 Remarks: A fertilizer enhancer; use 1 pt to 1 qt/A with liquid fertilizers

Hume-Aide

Company: Larson Century Ranch, P.O. Box 1982, Clarkston, WA 99403
 Ingredients: Liquid mixture of humic acids, cultured soil bacteria, and micronutrients biologically extracted from leonardite, green sands, montmorillonite and other deposits
 Claims: Helps retain soluble fertilizers in the root zone; stimulates germination, early growth; buffers salinity and toxicity of commercial fertilizers
 Remarks: Use at 1-2 qt/A

Humi-Phos (Also HumiPhos N--contains urea)

Company: Glacier Natural Products & Research Corp., Box 569, Polson, MT 59860
 Ingredients: 0-1-0 from leonardite and rock phosphate
 Claims: Nourishes plants, conditions soil
 Known Research: Bauder (1976)

Humisol

Company: Germes, Ukraine
 Ingredients: Humates, fulvoacids, vitamins, natural phytohormones, micro- and macro-elements
 Claims: Increases crop yield; suppresses diseases
 Remarks: A liquid product from worm-processed manure

Hungavit (Several different products for various crops; i.e., HungavitA for grapes and fruit trees)

Company: Hungavit-Mexico, SA. de CV, 2284 Francisco Ascencio Blvd, Puerto Vallarta, Mexico CD 48300 (manufactured by BioLife 2000, Inc., 8360 Keszthely, Ady Endre)

Ingredients: Organic humus and acids; composted plant particles and minerals

Claims: Helps plants optimally use available nutrients

Remarks: Apply 0.54 gal/A two or three times

Hybro-tite

Company: Hybro-tite Corp., P.O. Box 527, Lithonia, GA 30058

Ingredients: Primarily SiO₂ (73%); Al₂O₃ (14.7%); Fe₂O₃ (1.2%); MgO (0.7%); K₂O (4.7%) and smaller amounts of others

Claims: A long-term soil conditioner and trace element source

Remarks: Ground granite meal, an ingredient of Erth-rite

Known Research: Walsh (1965)

Hydrogen Peroxide

Company: ECH₂O₂, Inc., P.O. Box 126, Delano, MN 55328

Ingredients: 35% food-grade hydrogen peroxide

Claims: Enhances seed germination and foliar feeding

Remarks: Use 16 oz/A in 20 gallons of water

Hydro PAM

Company: Stockhausen, 2401 Doyle St., Greensboro, NC 27406

Ingredients: 90% sodium acrylate/acrylamide copolymers

Claims: Reduces erosion by binding soil particles

Remarks: Apply 3 lb/A

Hydrophos

Company: Phosyn Plc., Wellington Rd., The Industrial Estate, Pocklington, York, YO4 2NR, United Kingdom

Ingredients: Liquid phosphate containing 44% P₂O₅, 10% MgO, 7.4% K₂O

Claims: Promotes uniform tubers, bulking and size; delays foliage dieback; reduces tuber disorders

Hydro-Source

Company: Distributed by Mark 21, Inc., 1403 N. Cleveland, Sioux Falls, SD 57103

Ingredients: Synthetic cross-linked polyacrylamide

Claims: Reduces fertilizer leaching; increases germination; improves soil conditions

Remarks: Super absorbant; use 5-15 lb/A when drilled or up to 80-400 lb/A broadcast

Hynite

Company: Hynite Corp., P.O. Box 219, South Milwaukee, WI 53172

Ingredients: Natural organic nitrogen (12%) from leather tankage

Claims: Improves aeration and water retention; feeds soil organisms; season-long release of nitrogen

Remarks: Has high chrome content, 1.1-2% Cr

IAT Foliar Spray (Alternative name Symspray)

Company: Integrated Agri Tech Inc., 3315 Auburn Drive, St. Joseph, MO 64506

Ingredients: Organic solution of cytokinin, microminerals and nitrogen

Claims: Reduces stress, stimulates fruit set, mobilized nutrients in plant

Remarks: Apply 1 gal/25 acres to corn at 8-10 leaf stage; “developed and tested by Agro-K Corp. as Symspray”

IAT Residue Treat (See Symbex)

Company: Integrated Agri Tech Inc., 3315 Auburn Drive, St. Joseph, MO 64506

Ingredients: Microbial culture of *Actinomyces thermophilus*, *Azotobacter chroococum*, *Mixobacteria* sp., Streptomyces, Fulvourides and *Bacillus* sp. in a whey base

Claims: Increases yield and quality

Remarks: “Developed and tested by Agro-K Corp. as Symbex”

IAT Seed Treat (Alternative name Symcoat)

Company: Integrated Agri Tech Inc., 3315 Auburn Drive, St. Joseph, MO 64506

Ingredients: No specifics; blend of cytokinins and micronutrients

Claims: Aids germination, increases yields

Remarks: “Developed and tested by Agro-K Corp. as Symcoat”

IAT Soil Treat (Alternative name Symbooster)

Company: Integrated Agri Tech Inc., 3315 Auburn Drive, St. Joseph, MO 64506

Ingredients: No specifics given; contains plant growth regulators, enzymes and micronutrients

Claims: Increase yields and microbial activity, improved nutrient uptake

Remarks: “Developed and tested by Agro-K Corp. as Symbooster”

Ignite

Company: National Ag Products Development, Inc., 1235 100th Street SE, Byron Center, MI 49315

Ingredients: Specific organisms not given; also contains Zn, Cu, Mn, Mo and Fe, extract of kelp, yeasts, and humates, starch included

Claims: Faster germination, higher yields

Remarks: A multicrop seed inoculant, apparently can be used with corn, wheat and legumes

IMN (International Micro Nutrients)

Company: Agri-products Division of Beatrice Foods

Ingredients: Nevada mineral deposit containing 8% K, 2% Ca, 12% S, 3% Fe; smaller amounts of six other elements

Known Research: Schulte (1981)

IM-PRUV-ALL (Several product formulations)

Company: IM-PRUV-ALL Agriculture Inc., 703 Ramona Avenue, Modesto, CA 95350

Ingredients: Several product formulations including 6-2-2 and micronutrients

Claims: Improved quality, builds complete soil fertility, earlier and more uniform maturity, improved tilth and humus

In Bounds

Company: Ag Spectrum, P.O. Box 215, 428 East 11th St., Dewit, IA 52742

Ingredients: Liquid ammonium sulfate

Claims: To be used as a spray adjuvant; enhances uptake of most applied herbicides

Increase 1A and 2C

Company: National Ag Products Development, Inc., 1235 100th Street SE, Byron Center, MI 49315

Claims: Increases yields; stimulates nutrient uptake; increases cell division

Remarks: Increase 2C is for corn at 4 oz/10 acres, whereas 1A is for most other crops at 2 lbs/10 acres; apply as fine mist

Indicate 5

Company: Brandt Consolidated, Pleasant Plains, IL 62677

Ingredients: 49% wetters, spreaders, penetrants; 34% buffers

Claims: Adjuvant for herbicides, insecticides, fungicides, and plant hormones

Initiate

Company: Loveland Industries, Inc., P.O. Box 1289, Greeley, CO 80632-1289

Claims: Promotes earlier nodulation; improves yield of soybean

Remarks: Apply 1 oz/A as seed treatment

Insta-gro

Company: Insta-gro International Inc., Caledonia, OH 43314

Ingredients: Several formulations including 9-18-9-1, 3-18-18-1 and 10-10-10-1

Remarks: Liquid plant food

Ironite

Company: Ironite Products co., Humboldt, AZ 86329

Ingredients: Pyrite and iron sulfate containing 1% N, 1% Ca, 1% Mg, and 5% S with small amounts of other nutrients

Claims: Improves root system; helps plants resist disease

J and J Soil Conditioner

Company: J and J Agri-Products and Services, 220 S. 2nd Street, Dillsburg, PA 17019

Ingredients: Ammonium laureth ether sulfate 48%

Claims: Loosens soil and aids downward movement of water; reduced soil crusting; better crop germination and emergence

Remarks: Apply at 4 oz/A

Jackpot

Company: Bio Huma Netics, Chandler, AZ

Ingredients: Combination of trace elements complexed with organic acids

Claims: Used with potatoes for combination of increased tuber size and solids and vine killer

JumpStart

Company: Philom Bios, #318-111 Research Dr., Saskatoon, Sask, Canada S7N 3R2

Ingredients: Wettable powder containing *Penicillium bilaii*

Claims: Promotes better use of phosphates and quick emergence; early vigor; increased stress tolerance

Remarks: Do not use JumpStart on soils high in phosphates or on soils that do not bind phosphates; apply to seeds

Jump Start

Company: Agro-K Corporation, 36 37th Ave. NE, Minneapolis, MN 55421
 Ingredients: 2.5% Ca
 Remarks: Is to be used as a root dip for fast establishment of transplants

Kaylorite

Company: Kaylorite Corp., Dunkirk, MO
 Ingredients: Glauconite greensand containing 5-8% K₂O, 0.5-1% P and small amounts of 20 other elements
 Claims: Nutrient source for remineralizing and rejuvenating soils
 Remarks: 300-400 lb/A in row or 1000 lb/A broadcast recommended

Kb

Company: Jednak Floral Co., P.O. Box 1917, Columbus, OH 43216
 Ingredients: Humic colloid suspension containing low concentrations of nutrients
 Claims: Controls soluble salts and makes fertilizers more efficient
 Remarks: Promotional material indicates it contains abundance of colloids

Kelpac

Ingredients: Derived from South African seaweed (*Ecklonia maxima*)
 Known Research: Edmeades (2002)

Kel-Plus

Company: Dawn Corp., Denison, IA 51442
 Ingredients: Extract of kelp
 Claims: Aid in root development and plant growth
 Remarks: Growth promotion factor not yet positively identified

Keylate Ca

Company: Stoller Enterprises, Inc., 8580 Katy Freeway, Suite 200, Houston, TX 77024
 Ingredients: 3% chelated Ca
 Remarks: For field crops, apply 1 qt/A

Keylate (I Superstarter)

Company: Stoller Enterprises, Inc., 8580 Katy Freeway, Suite 200, Houston, TX 77024
 Ingredients: 1% Mg, 1% Cu, 1% Mn, 4% Zn in chelated form
 Remarks: For field crops, apply 1 qt/A

Keylate-M (II Super Starter)

Company: Stoller Enterprises, Inc., 8580 Katy Freeway, Suite 200, Houston, TX 77024
 Ingredients: 2% Ca, 2% Mn, and 2% Zn in chelated form
 Remarks: For field crops, apply 1 qt/A
 Known Research:

Kicker

Company: First Amendment Corp., P.O. Box 30, Arimo, ID 83214
 Ingredients: Unspecified amounts of boron, copper, iron, manganese, nitrogen, phosphorus, potassium, sulfur, zinc in liquid form
 Claims: Better water penetration, better quality crops; supports crops by promoting microorganism growth
 Remarks: Apply 1 qt/A for field crops

Kick-Off

Company: Distributed by Ag Spectrum Co., P.O. Box 215, 602 First St., DeWitt, IA 52742
 Ingredients: Liquid chelated micronutrient mix with 1% S and Zn, 0.025% Co and Mo, 0.25% Cu, 0.5% Fe and Mn
 Claims: Promotes stronger roots and abundant yields
 Remarks: Apply 2-4 lb/A in row-directed spray when plants are 4-12 inches high

King Fish

Company: K.C. Mattson Co., 524 S. Rosemead Blvd., Pasadena, CA 91107
 Ingredients: Homogenized liquid fish; no guaranteed analysis given
 Claims: Earlier germination, better roots, controls rot, "crumbles" soil, improves quality
 Remarks: "Liquid guano"

KK Organic Soil Builder

Company: Watertown, WI 53094
 Ingredients: California kelp and fish solubles
 Claims: Neutralizes both acidic and alkaline soils; more available nutrients
 Remarks: For corn use 100-150 lb/A in planter and 160 lb/A sidedressed

KOH Humic Concentrate

Company: AgriEnergy Resources, 21417 1950 E. St., Princeton, IL 61356
 Ingredients: Potassium hydroxide extraction of mined humates

Kozgro

Company: Kozgro, Inc., 208 Ellen Street, Boise, ID 83704
 Ingredients: Blend of organic plant foods and nutrients along with fish emulsion and kelp
 Claims: Aids in germination; improves quality of fruit and vegetable plants; acts as a wetting agent

Kozgro's AFB

Company: Kozgro, Inc., 20272 Ward Rd., Caldwell, ID 83605
 Ingredients: Contains active humic acid
 Claims: Improves soil aeration and water penetration; increases nutrient availability; helps control nematodes
 Remarks: Suggested rates 3-16 oz/A; should not be mixed with water at 1:9 ratio as this creates a "rhythmic dilution"

Lactobase (Labeled identically to Seaquist)

Company: Ferma-Gro Corp., Storm Lake, IA 50588
 Ingredients: High molecular weight proteins and amino acids
 Remarks: Plant growth activator

LA-Water Normalizer (See Catalyst Altered Water)

Company: C.A.W Industries, Rapid City, SD
 Ingredients: Apparently as extract of South Dakota lignite
 Claims: Acts as a growth conditioner; cuts fertilizer need in half

Leonardite

Company: Prairie States Inc., 216 3rd Avenue, Enderlin, ND 58027

Ingredients: Oxidized lignite

Claims: Adds organic matter; stimulates growth

Known Research: Aitken et al. (1964); Hammond et al. (1964); Egli and Pendleton (1965); O'Donnell (1973); Bauder (1976); Agvise (1979)

Lescozyme (See GroZyme)

Company: Lakeshore Equipment and Supply Co., Elyria, OH 44035

Remarks: Identical label to GroZyme with the name changed

Lifeline

Ingredients: Mixture of humates, rock phosphate, gypsum and protein nitrogen, 1.3-2.2-0.5-4.3

Claims: Nutrient release agent, improve water relations, reduce erosion, reduce insect and weed infestations

Like Wild (See Saturex)**Liquid Bacteria Concentrate, Nutrapathic**

Company: Parametric Associates, Inc., 10934 Lin-Valle Dr., St. Louis, MO 63123 (marketed by Williams Soil Service, Paullina, IA)

Ingredients: Blend of high enzyme-producing bacteria

Claims: Detoxifies soil

Liquid Blue

Ingredients: Several grades of liquid fertilizer including 12-31-14, 10-20-30, 25-15-10, 25-0-25, 12-45-0, 28-18-8, 20-20-20 and 30-10-10; all contain micronutrients including 4% S, 0.02% B, 0.05% Cu, 0.10% Fe, 0.05% Mn, 0.0009% Mo, 0.05% Zn

Claims: More efficient utilization by plants

Liqui-Cal

Company: Alpine Plant Foods, Inc., 3185 Cline Rd., Corydon, IN 47112

Ingredients: 8-0-0-8 Ca as a Ca-saturated organic chelating agent

Remarks: Use 0.5 to 3 gal/A or 1 gal for each 500 lb of CaCO₃ required

Known Research: Whitney et al. (1989)

Liquid Calcium

Company: National Ag Products Development, Inc., 1235 100 Street SE, Byron Center, MI 49315

Ingredients: Glucoheptonic acid carrier of calcium

Claims: Corrects calcium deficiency

Remarks: 1 gal supplies as much Ca as 500 lb lime; suggests can be used as a lime substitute

Liquid Fish (Gulf Menhaden Condensed Fish Solubles)

Company: Liquid Fish, Inc., Rt. 2, Box 84, Bonduel, WI 54107

Ingredients: 5% N, 0.56% P, 1.5% K with variety of other elements, amino acids, and vitamins listed

Claims: Substitutes for standard fertilizer program; use 33% normal fertilizers first year

Remarks: Typical recommendation includes 1 gal/A soil applied plus foliar applications

Liquid Humas

Remarks: Fertilizer enhancer which makes P and Fe more available; stimulates roots and improves germination

Liquid Iron +

Company: Colorado International Corp., Commerce City, CO 80022
 Ingredients: Fe (5.96%); Cu (0.16%); Zn (0.09%); S (3.84%) in chelated forms
 Claims: Iron source and improved fertilizer efficiency

Liquid Lime

Company: S and G Chemicals, 10036 Connell Street, Overland Park, KS 66212
 Ingredients: Trihydroxy-glutaric acid (20%); CaO (4%); organic Ca complex (3%); deionized water carrier (73%)

Liqui-Til

Company: Patterson Chemical Co., 1400 Union Avenue, Kansas City, MO 64101
 Ingredients: Trihydroxy glutaric acid (20%); organic Ca complex (8%)
 Claims: Neutralizes pH in alkaline soils, improves water penetration and retention, increases crop yields, reduces compaction
 Remarks: "A gypsum substitute soil conditioner"

L.O.C.

Company: Amway Corp., 7575 E. Fulton Road, Ada, MI 49355
 Ingredients: Palm oil soap
 Known Research: Stone (1982)

Lomus

Company: Agro-mates, Inc.
 Ingredients: "Conditioned" humic acids to make water-soluble; from N.M. leonardite
 Claims: Restore humus; improve tilth, increase moisture retention, nutrient uptake, rooting and yield, provide longer shelf life
 Remarks: "Designed to restore humus and supplement certain micronutrients"

MAC (Manure Ammonia Control)

Company: Essential Minerals, Inc., 30400 Telegraph Rd., Suite 308, Birmingham, MI 48010
 Ingredients: Ground limestone
 Claims: Eliminates ammonia volatilization

Magna Gro

Company: MagnaGro International, Inc., Box 261, 911 N. First St., Lawrence, KS
 Ingredients: Extracts of bacteria, yeast, and fungi polycoferment that includes 0.15% alpha keto acids, 6.6 ppm gibberellic acids, 12.9 ppm indoleacetic acid, 9 ppm indolebutyric acid, 10% humic acid and 8% polysaccharide complexes
 Claims: Stimulates microbes, root growth, and early plant development; reduces stress; less fertilizer needed
 Remarks: Use at 1 gal/10 acres

Magnet (See AmiSorb; this is the name used for vegetable label)

MAN-AN-SO Micro-Gran

Company: Man-An-So Corp., 923 N. 2nd Street, Ames, IA 50010

Ingredients: Contains Ca (16%); Mg (0.5%); S (14%); Co (0.006%); Cu (0.1%); Fe (0.15%); Mn (0.2%); Zn (2.0%)

Claims: Secondary and micronutrient source

Manu-Rx

Company: Pro-Ag Inc., 2072 E. Center Circle, Minneapolis, MN 55441

Claims: Manure composting aid

Maxicrop

Company: Maxicrop, USA Inc., P.O. Box 964, Arlington Heights, IL 60006

Ingredients: Liquefied seaweed; no detailed contents given

Claims: Increases crop yields and disease, frost and insect resistance

Remarks: 3 gal/A for corn

Known Research: Edmeades (2002)

Medina

Company: Medina Agricultural Products Co., Box 309, Hondo, TX 78861

Ingredients: Contains Mg (0.5%); Fe (0.1%); Zn (0.05%); other specifics not given

Claims: Increase yields and quality, improve soil physical conditions, more efficient use of fertilizer, and faster breakdown of chemical and crop residues

Remarks: Promoted as soil activator, restores natural productivity

Known Research: Weaver et al. (1974); Murdock et al., cited in Overdahl (1975); Randall, cited in Overdahl (1976); Roth (1976, 1977); Weaver (1979); Haby et al. (1980); Lessman and McCutchen (1980); Kelling et al. (1988f)

Menefee Humate

Company: Earthgreen Products Inc., 8222 Doughas Ave., Suite 100, Dallas, TX 75225

Ingredients: Freshwater humate; 35% humic acid, 35% organic matter, 35% C; small amounts (<1%) of other nutrients

Claims: Increases nutrient uptake; stimulates soil microorganisms

Messenger

Company: Stoller Chemical Co., 8582 Katy Freeway, Houston, TX 77024

Ingredients: 24% Ca

Claims: Increases yield, root systems, product quality, and maturation of crop

Remarks: Apply at 0.4 lb/A dissolved in 40 gal/A; is promoted as a calcium supplement

Known Research: Oplinger (1990b)

Messenger

Company: Eden Bioscience, 3830 Monte Villa Pkwy., Suite 100, Bothell, WA 98021

Ingredients: Based on a naturally occurring harpin protein

Claims: Increases yield; improves plant health and vigor; enhances nutrient uptake by increasing rate of photosynthesis; reduces disease

Remarks: For use on potatoes

Miagra (Several products including soil conditioner, trace element fertilizer and pH changer)

Company: Miagra Inc., 2762 S. Sheridan Road, Box 526, Stanton, MI 48888
 Ingredients: Soil conditioner: 48% ammonium alkyl ether sulfate
 Claims: Allows water to penetrate, reduces runoff and erosion, higher yields
 Known Research: Vitosh and Hyde (1977)

Micro 500

Company: Agro-Culture Liquid Fertilizer, 3026 W. M-21, P.O. Box 150, St. Johns, MI 48879
 Ingredients: Combination of micronutrients
 Remarks: Apply at 2 qt/A

Micro-Ag Seed Life

Company: Taino Technology and Technique, Inc., S 12102 Andrus Rd., Rt. 2, Box 286, Cheney, WA 99004
 Ingredients: A low-salt, NPK plus chelated micronutrient fertilizer
 Remarks: Apply 1.6 oz/100 lb seed as seed treatment

Microbase (Several products with varying nutrient analyses)

Company: MVV Inc., 1670 E. 13th Street, Salt Lake City, UT 84102
 Ingredients: Nutrient analyses vary but usually contain Ca, Mg, S, Fe, Mn, and Zn
 Remarks: Apparently are specialized nutrient sources

Micro-Clear

Company: Taino Technology and Technique, Inc., S 12102 Andrus Rd., Rt. 2, Box 286, Cheney, WA 99004
 Remarks: A live microbe product to apply to lakes, ponds, etc. to clear algae

MicroCN

Company: TerraMax, Inc., 16905 Aberdeen St., N.E., Ham Lake, MN 55304
 Ingredients: Iron, 0.1%; copper, 0.05%; manganese, 0.05%; zinc, 0.05%, various microorganisms
 Claims: Includes microorganisms that help control soybean cyst nematodes, breaks down chlorinated hydrocarbons and plant residue; aids in establishing a healthy soil environment

Micro-Lite

Company: Micro-Lite Corp., Toronto, KS 66777
 Ingredients: 20 elements listed including Si (20.62%); Mg (12.10%); Fe (5.25%); Al (3.1%); Ca (6.52%); K (2.4%); P (0.38%)
 Claims: Balanced nutrient source
 Remarks: "A fine grained vermiculite ore;" recommended at 250 lbs/A broadcast
 Known Research: Brown (1975)

Micromate NS Magnesium

Company: Stoller Enterprises, Inc., 8580 Katy Freeway, Suite 200, Houston, TX 77024
 Ingredients: 7% N, 16% S, 17% Mg

Micro-Min

Company: Anvil Mineral Mining Corp., Bay Springs, MS 39422
 Ingredients: Montmorillonite containing B (0.02%); Co (0.0028%); Cu (0.12%); Fe (2.5%); Mn (0.24%); Mo (0.005%); Zn (1.5%); S (2.5%)
 Claims: Supplies micronutrients, stimulates microorganisms, improves structure, and reduces need for N fertilizer
 Remarks: Mined from marine volcanic ash deposit; rate usually 200 lb/A first year, 100 lb/A thereafter

Micro Munch

Company: Agro-Chem, Inc., 11150 Addison, Franklin Park, IL 60231
 Ingredients: Concentrate of microorganisms, enzymes, and organic nutrients
 Claims: Speeds decomposition of plant residues

MicroMX

Company: TerraMax, Inc., 16905 Aberdeen St., N.E., Ham Lake, MN 55304
 Ingredients: Iron, 0.1%; copper, 0.05; manganese, 0.05%; zinc, 0.05%; various microorganisms
 Claims: Microorganisms break down pesticide residues, chlorinated hydrocarbons, and plant residue; aid in establishing a healthy soil environment

MicroNFB

Company: TerraMax, Inc., 16905 Aberdeen St., N.E., Ham Lake, MN 55304
 Ingredients: Mix of food grade derived products and bacteria that form nitrogen fixing nodules on soybean roots
 Claims: Introduces an improved nitrogen fixing strain into soil; promotes the establishment of nodules occupied by the delivered strain; fixes more atmospheric nitrogen; increases yield

Micronized Landplaster (See Echol West)**Microp**

Company: Soil Technologies Corp., 600 N 12th Street, P.O. Box 1415, Fairfield, IA 52556
 Ingredients: Suspension of *Chlanydomonas* and *Cyanophyte* algae
 Claims: Acts as a cover crop; reduces fertilizer need with repeated use, improves soil moisture relations, reverses compaction, fixes nitrogen
 Known Research: Minor et al. (1990); Minor (1991)

Microplex

Company: Fertility King, Inc., 5475 N.W. Beaver Drive, Des Moines, IA 50323
 Ingredients: Liquid mixture of soil microorganisms, associated enzymes, and trace minerals
 Claims: Reduces the need for N, P, and K application; microplex enzymes and mycorrhizae fungi generate early vigor and aid in high germination; creates tilth and stimulates root development; improves nutrient uptake
 Remarks: Stimulates biological nitrogen fixation in soil while mobilizing locked up P and K into forms available for crop uptake

Micro Plus

Company: Western Sunburst Inc., 906 N. Carpenter Road Suite C, Modesto, CA 95351
 Ingredients: A Fe, Mn, Zn foliar micronutrient spray

MicroVance

Company: TerraMax, Inc., 16905 Aberdeen St., N.E., Ham Lake, MN 55304
 Ingredients: 0-3-3 formulation; iron, 0.1%; copper, 0.05; manganese, 0.05%; zinc, 0.05
 Claims: Solubilizes soil-bound chemical contaminants; encourages microbial growth
 Remarks: Useful in detoxifying soils

Midwestern Bio-Ag

Company: Midwestern Bio Ag, Hwy ID, Box 126, Blue Mounds, WI 53517
 Remarks: A philosophy and program for soil fertilization which emphasizes certain materials such as chelated micronutrients, high Ca lime, K₂SO₄, superphosphates or MAP and ammonium sulfate
 Known Research: Kelling et al. (1996)

MI-HI Microbes

Company: Taino Technology and Technique, Inc., S 12102 Andrus Rd., Rt. 2, Box 286, Cheney, WA 99004
 Remarks: Sprayed at 2.66 oz/A to crops with a high incidence of disease

Miko One Soil Zymate

Company: Miko, Inc., 8240 Indy Lane, Indianapolis, IN 46224
 Ingredients: Polyhydroxylignin sulphonates, ethoxylated nonylphenols, ethoxylated linear alcohols, methyl cellulose, fulvo- humates, marine algae extracts, Torula yeast extracts and sodium glucoheptonate
 Remarks: Should be used to stimulate and extend applied fertilizers, applied at 1 qt/A in fall or preplant

Mineral Max

Company: AgriEnergy Resources, 21417 1950 E. St., Princeton, IL 61356
 Ingredients: Solubilized granite dust

Minx Plant Health Food

Company: Minx Corp., Henes Park Lane, Menominee, MI 49858
 Ingredients: Deodorized mink manure
 Claims: Organic nutrient source

ML2-248

Ingredients: Apparently a nonionic surfactant
 Known Research: Lawless et al. (1981)

Moana Fish Fertilizer

Ingredients: Hydrolyzed fish
 Known Research: Edmeades (2002)

Mol-Cal

Company: Mark 21, Inc., P.O. Box 132, Sioux Falls, SD 57101
 Remarks: Molasses and Ca specially formulated for low-Ca soils

M.O.M.

Company: Mandrones Organic Mineral Co., P.O. Box 2266, Salem, OR 97304
 Ingredients: Mined organic humus fortified with nitrogen; 21 elements listed
 Claims: Reduces need for commercial fertilizer, faster germination, improves soil tilth
 Remarks: 1000-1500 lb/A for row crops

Mother Earth

Company: North American Agricultural Chem. Corp., 170 E. Market Street, Suite 933, Indianapolis, IN 46204
 Ingredients: Primarily S (20%) with nine other elements present
 Claims: Supplies S, increases CEC, increases nutrient availability, reduces plant shock or disease
 Remarks: Mined deposit

MPact

Company: Enviro Products Corp., P.O. Bxo 335, Nixa, MO 65714
 Ingredients: 10-5-5 biocatalyst from fermenting dairy manure and supplemented with nutrients
 Claims: Increases yield; improves quality; reduces hard-pan and crusting
 Known Research: Lukina et al. (1997)

Multicrop Clay Breaker

Company: Multicrop USA, 7415 Whitehall, Suite 111, Fort Worth, TX 76118-6427
 Ingredients: Sulphonated ion exchange resin in an acidic solution
 Claims: Accelerates the growth of natural bacteria which breakdown dead organics in the soil

Myco-bio-boost

Company: AgriEnergy Resources, 21417 1950 E. St., Princeton, IL 61356
 Ingredients: 2.-0.5-1-15Ca-10S pelleted fish fertilizer coated with mycorrhizae and trichoderma
 Remarks: Use in-furrow for row crops

Myconate

Company: VAMTech LLC, 3186 Pine Tree Td., Unit D, Lansing, MI 48911
 Ingredients: Potassium salt of 4'-methoxy, 7-hydroxy isoflavone (formononetin) isolated from clover roots
 Claims: Increases fungal hyphal growth; stimulates mycorrhizal activity
 Known Research: Bly et al. (2002)

MYCROZ

Company: Strong and Strong, Inc., P.O. Box 368, Rt. 23 N., Ottawa, IL 61350
 Claims: Spray adjuvant that reduces herbicide needs by 50%

N-Fix NS (See N-TEXX)

Company: Ag International, Inc., 2320 Apollo Circle, Carrollton, TX 75006
 Ingredients: 15-5-5 fertilizer made with KNO_3
 Claims: Yield increases at nominal additional costs
 Remarks: To be used at 1 to 2.25 lb/A as supplement to other fertilizers and plant additives
 Known Research: Penas (1983); Westerman (1985)

N-gard

Company: Carbo-Tech America, 3514 W. Decker Chapel Rd., Decker, IN 47524
 Ingredients: Soluble calcium
 Claims: Aids in development of desirable soil structure and increases efficient use of nitrogen fertilizer
 Remarks: Should not be mixed with products containing phosphorus and potassium; apply 3-5 gal/A; not a replacement for lime

N-hance

Company: Clearstart Fertilizer, RR #1, Box 168, Emery, SD 57332
 Ingredients: 10% soluble calcium
 Claims: Increases nitrogen use efficiency
 Remarks: Use 3-5 gal/A

N-Hib Calcium (See Nitro Plus 9)

Company: Stoller Chemical Co., Inc., 8582 Katy Freeway, Suite 200, Houston, TX 77024
 Ingredients: 12% Ca; commonly mixed with 28% UAN or liquid urea
 Claims: Results in more Ca and N uptake, N in ammonical form for more efficient N use; higher yields, higher quality
 Remarks: Some advertising indicates that N-Hib contains a “nitrate inhibitor”
 Known Research: Kleinhenz et al. (1999)

N-Plus

Ingredients: Combination of N and Ca
 Known Research: Palta et al. (1998); Ozgen et al. (1999)

NRG+

Company: N-Rich Plant Food, Inc., Box 111, Humboldt, SD 57035
 Ingredients: Several grades of NPK fertilizers with low amounts of micronutrients included (0.05% Cu and Zn; 0.1% Fe; 0.09% Mn)

N-Rich

Company: Land Products, Inc., 7800 Marble NE, Albuquerque, NM 87110
 Ingredients: Humic acid (20%); natural carbonaceous humate base (80%)
 Claims: Improves structure; stimulates bacteria; increases water retention; increases fertility
 Remarks: Contains no N; apply at 500 lb/A first year and 250 lb/A thereafter
 Known Research: Penas (1983)

N-Rich Plant Food

Company: N-Rich Plant Food, Inc., Box 111, Humboldt, SD 57035
 Ingredients: Several “water soluble fertilizers with 17 elements” including Zn and S, grades include 11-28-18, 28-16-7, 24-6-18
 Claims: Increases yields and saves up to 1/2 of fertilizer costs
 Remarks: For corn, use 1 lb/1000 plants

N-TEXX

Company: Chem X International, Inc., P.O. Box 1095, Frisco, TX 75034
 Ingredients: 15-5-5 liquid fertilizer
 Claims: Increased yields
 Results: To be used as supplement to regular fertilizer program at 1 gal/10 acres; letter states it is same as N-FIX

N-Zone Plus

Company: Ag Spectrum, P.O. Box 215, 602 First St., DeWitt, IA 52742

Ingredients: Chelated micronutrient fertilizer containing 1% Ca, Cu, and Mn; 0.5% Co and 0.7% Mn

Remarks: Recommended for use with legume at 2 qt/A when plants are 4-6 inches tall

Nachurs

Company: Nachurs Plant Food Co., 421 Leader Street, Marion, OH 43302

Ingredients: 9-18-9, 10-20-10, 3-18-18 fertilizer; may also have other grades

Claims: Low salt, higher nutrient availability

Known Research: Walsh (1965); Christensen and Reid (1970); Clapp and Small (1970); Dahnke et al. (1974, 1975, 1976); Wiese and Stenberg (1974); Murdock et al., cited in Overdahl (1975); Holcomb et al. (1976); Walsh et al. (1976); Bandel (1982); Penas (1983); Wolkowski and Kelling (1985); Schulte (1986)

National Ag Soil Treatment

Company: National Ag Products Development Inc., P.O. Box 8611, Grand Rapids, MI 49508

Ingredients: Ammonium laureth sulfate, 58%; alpha pinene, 4%; isopropanol, 4%; inert ingredients, 34%

Claims: Increases downward water movement; more even stands, improved root growth, reduced erosion, easier tillage

Remarks: Used at 12 oz/A

Known Research: Baker (1981)

Natural (See Hynite)

Company: Hynite Corp., P.O. Box 219, South Milwaukee, WI 53172

Ingredients: 8-1-3 fertilizer

Natur-All One-Step

Company: Conservation Chemistry Corp., 112 W. Wyoming Avenue, Las Vegas, NV 89102

Ingredients: No specific ingredients given, apparently contains enzymes

Claims: Better rooting, higher yields, unlocks soil nutrients, lowers fertilizer needs

Remarks: Enzyme growth stimulant and soil activator

Nature Grow

Company: Imperial Mining and Minerals Corp., Eureka, CA 95501

Ingredients: Laterite mineral soil containing Mg (2%); Fe (30%); Mn (0.4%); Co (0.1%)

Claims: Releases locked up nutrients, supplies nutrients

Nature N

Company: Ensign and Halliman Inc., 101 E. Wilson Street, P.O. Box 104, Cleburne, TX 76031

Ingredients: Bluegreen algae in a nutrient medium (Bioplex) and a complex of plant growth regulators (Benenone)

Claims: Stimulates plant growth, reduces costs, improves desirable soil characteristics

Nature's Miracle

Company: Glengarry Gardens, Inc., 76 Ridgeview Terrace, Wayne, NJ 07470

Claims: Renews vitality of worn out soil, replaces need for fertilizer

Remarks: Apparently mostly recommended for gardens and house plants

Nature's Nutrient (See Catalyst Altered Water)

Company: Greenscape Services (distributor for C.A.W. Industries Midwest)
 Ingredients: 50 trace minerals in chelated form with humic acids, amino acids and activated carbon in liquid suspensions
 Claims: Stimulates microbes, roots and more robust plants
 Remarks: Appears to be successor to Catalyst Altered Water or WillArd's Water

Nature's Touch

Company: Agro Chem, Inc., 11150 Addison, Franklin Park, IL 60131
 Claims: Restores stressed and polluted soils to higher productivity
 Remarks: May be most used with lawns

Nature's Wonder

Ingredients: "peat humic substance" marketed as a biostimulant
 Known Research: Heckman (2001)

Naturize Equity

Company: Naturize BioSciences, 11737 Central Parkway, Jacksonville, FL 32224
 Ingredients: 4.0% N derived from urea ammonium nitrate; microbial cultures of *Bacillus azotoformans*, *B. coagulans*, *B. licheniformis*, *B. megaterium*, *B. pumulis*, *B. subtilis*, *Paenilsacillus durum*, and *P. polymyxa*
 Remarks: Spray mixture must have pH between 5.0-9.0 for maximum activity

NEB-26 Feeding Stimulant

Company: Agmore, Inc., Belgrade, MT 59714
 Ingredients: 13.34% carbohydrates, 1.65% minerals, 0.32% protein, 0.13% fat
 Claims: Improves productivity; increases yield, microbial activity, and nutrient availability
 Remarks: Apply at 1 gal/A
 Known Research: Kelling et al. (2001)

NEF Complex 20 SL (Possible alternative name: Earthworm 2001)

Company: Probe Chemical Corp., Dallas, TX
 Ingredients: Bacterial fermentation concentrate containing enzymes, microorganisms including *Azotobacter*, *Thermoactinraye*, *Lactobacter*, and *B. subtilis*, and an active coferment containing amino acids, thioglycolates, nitrites, gibberellins, ammoniates, indolacetic acid and other compounds that stimulate soil organisms
 Claims: Increases microbial activity, water penetration, fertilizer efficiency and crop quality; reduces need for fertilizer and pesticides
 Remarks: "Biocatalyst containing live N-fixing microorganisms;" identical ingredient description to Earthworm 2001

Nem-a-Sul

Company: Greater Yields International, P.O. Box 280, Verona, MS 38879
 Ingredients: 15% sulfur fertilizer with hormones
 Remarks: Use as supplement to normal fertilization

Neptune's Harvest Liquid Fish

Company: Ocean Crest Seafood, 88 Commercial St., Gloucester, MA 01930
 Ingredients: 2-4-0.5 derived from hydrolyzed fish
 Claims: Increases yields and crop quality

Neutra Nuggets

Company: Essential Minerals, 108 S. 8th Street, Ashland, NE 68003
 Ingredients: Pelletized fine limestone
 Remarks: Need 100 lb for each 0.1 desired increase in pH, less on lighter soils

New Life

Ingredients: $\text{CaSO}_4 \cdot 2\text{H}_2\text{O}$ (51.5%); CaCO_3 (44.4%); SiO_2 (2.2%)
 Remarks: Sold as soil conditioner; applied at 200 lb/A
 Known Research: Haby et al. (1980)

Ni-Cal Plus

Company: Planterra International Corp., P.O. Box 59366, Dallas, TX 75229
 Claims: Breaks down soil calcium components in acid or alkaline soils to release soil nutrients
 Remarks: Works best when applied with Planterra Soil Inoculant; apply at 1 gal/A
 Known Research: Westerman (1985)

Nitrate Balancer

Company: Stoller Enterprises, Inc., 8580 Katy Freeway, Houston, TX 77024
 Claims: Helps regulate hormones in plants; improves skin set of potatoes
 Remarks: Use 1 gal/A

Nitro 10

Company: Zook and Ranck Inc., RR1, Gap, PA 17527
 Ingredients: Dried, processed leather tankage, 10-0-0
 Claims: Slow release source of N
 Remarks: Use in planter at 300 lb/A

Nitro 16

Company: Stoller Enterprises Inc., 8580 Katy Freeway, Houston, TX 77024
 Ingredients: 16% N solution, 6.5% Ca

Nitroac (Possible alternative name: BioStart)

Company: National Ag Products Development Inc., 1235 100th Street SE, Byron Center, MI 49315
 Ingredients: Selected bacteria cultures and related enzymes including *Bacillus subtilis*, *B. cereus*, *B. thuringiensis*, *B. megaterium*, *Azotobacteraceae*, *Aspergillus*, *Lactobacillus*, and cytokinin extract of kelp
 Claims: Assists the breakdown of plant residues and enhances asymbiotic N fixation, reduces fertilizer costs
 Remarks: Apply 1 gal/10 acres

Nitro-Gel

Company: Agro Products International, 5019 Elsby, Dallas, TX 75209
 Ingredients: 18-46-0 fertilizer in liquid form
 Claims: Reduces fertilizer used by 60%, reduces N leaching
 Remarks: Used with NG Activator forming a "humic gel"

Nitro-Hold

Company: National Ag Products Development Inc., 1235 100th Street, SE, Byron Center, MI 49315

Claims: Is a nitrogen extending solution for use with 28% UAN

Remarks: Physically encapsulates N in a strong carbohydrate solution; use 3 gal/A with 5 gallons of UAN

NITRO/MAX (See Agrispon)

Company: J and J Agri-Products and Services Inc., 220 S. Second Street, Dillsburg, PA 17019

Ingredients: Mixture of organic and inorganic compounds; organic compounds having phytohormone activity and act as morphogenes and porphyrin derivatives 0.0011%; other dissolved solids 0.5%; trace elements (not as a plant food source) 0.2%

Remarks: Note indicates this is same formula as Agrispon under new label

NitroMike (See Trans National Agronomy)**Nitron** (including Formula A-35)

Company: Nitron Industries Inc., P.O. Box 43, Larned, KS 67550

Ingredients: Enzymes

Claims: Increases nutrient availability, exchange capacity, germination, yields; mellows hardpans and acts as wetting agent

Remarks: Acts as catalyst to natural soil systems

Known Research: Gryszka and Hill (1988); Hill and Davidova (undated a and b)

Nitro Plus 9

Company: Stoller Enterprises, 8580 Katy Freeway, Houston, TX 77024

Ingredients: 9% N with Ca and Mg; derived from urea and Ca/Mg monocarbamides

Remarks: Apparently previously marketed as N-Hib

Nitro Plus 12

Company: Stoller Enterprises, 8580 Katy Freeway, Houston, TX 77024

Ingredients: 12% N, 7% Ca, 1% Mg, some urea and Ca/Mg monocarbamides

Claims: Improves yield and crop quality

Nitrosol

Ingredients: Derived from blood and bone containing gibberillic acid and tricontanol plus nutrients

Nitrozyme

Company: Manufactured by Atlantic Laboratories, Waldoboro, ME; distributed by Agri Growth Technologies, Suite 512, 10235 101 Street, Edmonton, Alberta, Canada

Ingredients: Extract of seaweeds, claiming traces of many elements and 400 ppm cytokinin as kinetin

Claims: Increased yields

Known Research: Morrow (1987); Taylor et al. (1990); Harker (undated)

No-BLO

Company: Cattle-Lac Liquids, Inc., P.O. Box 920, Gainesville, TX 76240
 Claims: Reduces soil erosion by “stabilizing the soil surface”
 Remarks: Apparently acts as a binding agent

N.O.C. (Nutritional Organic Conditioner)

Company: Paradise Marketing Inc., Anaheim, CA 92801
 Ingredients: “Organic cafeteria of multi-enzymatic biocatalytic agents supported by a complex of vitamins and minerals”
 Claims: Replaces fertilizer, aerates soil, increases water retention yield, quality, nutritional value, rooting, and shelf life
 Remarks: 3 gal/A for first application

Nongle

Company: Rare Earth Development Center for Agricultural Technique, Beijing, China
 Ingredients: Based on lighter rare-earth elements
 Claims: Increases yield and quality
 Remarks: Apparently is a mined and processed material

NOTOX

Company: NOTOX Corp., 2114 Avenue J, Lubbock, TX 79405
 Ingredients: Activated oxygen
 Claims: Triazine neutralizer
 Remarks: Apply 1 lb/A, attacks the triazine at the R3 position and renders it nonphytotoxic

Nu-Ag Seed Inoculants

Company: Pro-Ag Inc., 2072 E. Center Circle, Minneapolis, MN 55441
 Claims: Faster germination, earlier maturity, higher yields

Nu-Gro 10

Company: Major Brands Ltd., 25190 W. River Road, Perrysburg, OH 43551
 Ingredients: Nonionic polymer of ethylene oxide, nonionic alkyaryl polyoxyethylene glycols
 Claims: Penetrates soil, faster germination, better root system
 Remarks: To be applied to gumbo soils

Nulex Liquid Zinc

Company: Nutra-Flo Co., P.O. Box 2334, Sioux City, IA 51107-0334
 Ingredients: Various formulations with 10-20% Zn in clear liquid

Nurture

Company: Nurture, Inc., 4005 Hayes St., N.E., Columbia Heights, MN 55421
 Ingredients: 100% volcanic ash
 Claims: Revitalizing soil additive

Nu-Soil

Company: Nu-Soil, Inc., Suite #1215, 7500 College Blvd., Overland Park, KS 66210
 Ingredients: 6-12-6 + 1 B in blend of water-soluble polymeric polyelectrolytes
 Claims: Improves infiltration rate of bare soil; increases total porosity of bare soil; decreases bulk density

Nutra-Flo Liquid Fertilizers

Company: Nutra Flo Company, 1919 Grand Ave., Sioux City, IA 51106
 Ingredients: Various grades, including 9-18-9, 5-15-15, and 3-18-18
 Claims: Increases nutrient use efficiency; lower rates needed, low salt

Nutrapathic Liquid Bacteria Concentrate

Company: Parametric Associates, Inc., 10934 Lin-Valle Dr., St. Louis, MO 63123
 Ingredients: Detoxifying blend of high enzyme-producing non-pathogenic bacteria
 Claims: Releases locked-up soil nutrients
 Remarks: Apply 2 oz/A

Nutrapathic Soil Conditioner

Company: Parametric Associates, Inc., 10934 Lin-Valle Dr., St. Louis, MO 63123
 Claims: Reduces compaction, loosens soil, increases nutrient availability; increases root mass and stress tolerance

Nutra-Phos (See Sorba Sprays)**Nutricote**

Company: Agrivert Inc., 1345 Avenue of the Americas, New York, NY 10105
 Ingredients: Several grades of fertilizer coated with resin to be slow release

Nutrient Express

Company: Miller Chemical and Fertilizer Corp., Hanover, PA
 Ingredients: Various fertilizer grades, including 18-18-18 and 4-41-27
 Remarks: Apply foliarly at rates from 4-7.5 lb/A
 Known Research: Hall et al. (2002)

NutriGROW

Company: Carbotech Technogeis Inc., 165 N. Lively Blvd., Elk Grove Village, IL 60007
 Ingredients: Fertilizers of various grades (i.e., 5-15-5); made from oxidized lignite ores containing humic acid
 Claims: Increases nitrogen use efficiency and effect of fertilizers

Nutri-Lease

Company: Custom Chemicides, P.O. Box 11216, Fresno, CA 93772
 Ingredients: Proprietary blend of amino acids and organic complexing agents with some micronutrients
 Claims: Catalyzes the breakdown of post-harvest residue of crops

Nutri-Phyte P+K

Company: Biagro-Western, Downington, PA
 Claims: Aids yield and potato size distribution

Nutriplant SD

Company: Access Business Group International LLC, 7575 E. Fulton St., Ada, MI 49355
 Ingredients: Contains calcium, 4.0%; magnesium, 2.0%; sulfur, 4.0%; assorted micronutrients
 Claims: Enhances seedling emergence and growth
 Remarks: To be used as a seed coat at 3.5-16 oz/100 lb seed

Nutrisphere

Company: Speciality Fertilizer Products, 134 Cherry Hill Dr., Belton, MO 64012
 Ingredients: Patented granulations of micronutrients also containing N and S
 Claims: Increases micronutrient uptake

Nutrition Plus

Known Research: Whitney et al. (1996)

Nutritional Foliar

Company: Agro-Culture Liquid Fertilizer, 3026 W. M-21, P.O. Box 150, St. Johns, MI 48879
 Ingredients: 4-1-2

Nutrol

Company: Williams Soil Service, 5619-460 th St., Paullina, IA 51046
 Ingredients: 0-50-32 derived from monopotassium phosphate
 Claims: Improves and increases plant growth and health; increases disease resistance; speeds plant maturity
 Remarks: Low salt index

Oasis

Company: New Life Resources, Inc., 523 Bismarck Expressway, Bismarck, ND 58501
 Ingredients: Starch-based copolymer with *Azotobacter* and other organisms
 Remarks: To be used as a seed coating with specific formulations for 12 crops (mostly nonlegumes)

OGP-7

Ingredients: Seaweed extract from 3 species harvested and deep-frozen off French Coast; contains 19 trace elements, 18 amino acids, and 6 vitamins
 Remarks: Apply at 1-2 pt/A

Olde Worlde All-Purpose Spray Adjuvant

Company: Olde Worlde, Inc., 401 Fralay Road, Box 2488, High Point, NC 27261
 Ingredients: Nonyl phenoxy polyethoxy ethanol, 26%; constituents ineffective as a spray adjuvant, 74%
 Claims: Increases yields; improves pesticide, herbicide, insecticide and fungicide performance; improves root contact
 Known Research: Kelling et al. (1988c)

Open All

Company: Deutrel Laboratories, P.O. Box 768, Santa Paula, CA 93060
 Ingredients: Deuterium sulphate derived from heavy water and sulfuric acid 6.30%, organic sulfur compounds from deuterated water soluble depolarized petroleum 0.81%
 Claims: Normalizes pH, opens compacted soils; implied effect on N fixation
 Remarks: "Guaranteed to grow any plant in any soil"

Orga-Min

Company: Orga-min, Walnut Street NE, Canton, OH 44707
 Ingredients: A mined natural organic-mineral compost containing 22 elements
 Claims: Restores humus and fertility, activates bacteria, improves tilth, acts as catalytic agent
 Remarks: 200-300 lb/A in row or 500-600 lb/A broadcast for field crops

Organic Energy Compost

Company: Organic Energy Products Inc., Box 17, RR1, Mukwonago, WI 53149
 Ingredients: 1-1-1 with micronutrients and protein complexes; apparently are several variations
 Claims: Soil conditioner; advertising implies some insect and disease control activity

Organic-Phos (See Humiphos)

Company: Organic Laboratories Inc., 5050 Westheimer Street, Houston, TX 77027
 Ingredients: Untreated 100% organic phosphate (13% P)
 Claims: P source to replace bone meal

Organic Soil Treatment

Company: O.S.T. Products, Inc., 400 Third St., P.O. Box 429, Hearne, TX 77859
 Ingredients: Humus concentrate with composted peat and mixture of yeast, proteins, bacteria and enzymes
 Claims: Loosens tight soil; improves moisture holding capacity
 Remarks: Appears to be recommended mostly for lawns and gardens

Organic X-Tender

Company: Fertilizer Marketing Facilities Co., 9443 Sherwood Glen, Dallas, TX 75228
 Ingredients: Prehistoric humus with protein and bacteria added
 Remarks: Use 1000-4000 lbs/A

Orton Crystals

Company: Gyro Products, Inc., P.O. Box 7146, Colorado Springs, CO 80933
 Ingredients: Cross-linked polyacrylamide
 Claims: Holds water and nutrients in root zone; encourages early germination; improves soil structure
 Remarks: Super-absorbent; use at 5-15 lb/A

OXYBAC

Company: Bioferm International, 209 Chester Avenue, Moorestown, NJ 08057
 Ingredients: Complex of microbes, micronutrients, K fulvo-humates and surfactants
 Claims: Degrades herbicides, insecticides and other pesticides
 Remarks: "Microlytic soil detoxicant" by producing highly active oxidase enzymes

P3K (Possible alternative names: Biotron, BX)

Company: V and J Petrik Laboratories, Woodland, CA 95695
 Claims: Stimulates N fixing bacteria and other beneficial microorganisms, reduces fertilizer need by 50%; promotes crop residue decomposition
 Remarks: 0.2 gal/A recommended; condensed organic fertilizer
 Known Research: Newman (1980)

PAM (Polyacrylamides)

Remarks: Super absorbents
 Known Research: Bouranis et al. (1995); Sojka and Lentz (1997); Sojka et al. (1998); Lentz et al. (1998)

Panhandler

Company: Ag Nation Products, P.O. Box 30127, East Canton, OH 44730
 Ingredients: 58% ammonium laureth sulfate, 2% diapritine, 4% isopropanol
 Claims: Reduces compaction; breaks up hard pan
 Remarks: Apply 0.5-1 pt/A, depending on soil organic matter content

Pay Bac

Company: General Compost Corp., 322 S. 16th Street, Philadelphia, PA 19102
 Ingredients: Microorganisms, enzymes and hormones
 Claims: Apply to manure to stop nutrient loss from manure, improves soil moisture, stimulates root growth, eliminates manure odor

Pay Dirt Soil Wetter

Company: U.S. Ag Associates, Inc., Box 770084, Houston, TX 77072
 Remarks: Apparently is a wetting agent

PB-50

Company: Philom Bios
 Ingredients: Apparently a fungal inoculant
 Claims: Improves phosphorus availability
 Known Research: Lamond et al. (1990)

PCC 700

Ingredients: Apparently a zinc-containing material

PEK

Company: Bio-Huma-Netics
 Remarks: Apparently a nutrient mixture used for foliar applications

Penetrate

Company: LTL Marketing, Box 167, Castlewood SD 57223
 Ingredients: Contains humic acid fractions, enzymes
 Claims: Improves soil tilth; keeps soil from cracking; restores biological activity in soils

Pennasoil

Company: Tabox Inc., Bozeman, MT 59715
 Ingredients: Saporins and small amounts of minerals, proteins, and fats
 Claims: Enhances yield, surfactant; promotes healthy microorganism populations
 Remarks: Previously labeled as Gromor; uses 1 gal/10-25 acres

Penta Soil (See Pennasoil)

Company: McDowell Industries, P.O. Box 7247, Fargo ND 58109

Pepzyme (M, G and C)

Company: Taino Technology and Technique, Inc., S 12102 Andrus Rd., Rt. @, Box 286, Cheney, WA 99004
 Ingredients: Different enzyme products for soils, foliar applications and ponds, respectively
 Claims: Simulates beneficial microbes; increases nutrient availability; improves soil physical condition
 Remarks: Apply at 12.5 oz/A

Perk + Moly

Company: Custom Chemicides, P.O. Box 11216, Fresno CA 93772
 Ingredients: 3-17-0 with smaller amounts of micronutrients, including 0.55% Mo with natural plant extracts and complexing agents
 Claims: Improves root development and reduces stress
 Remarks: Apply 16 oz/A banded or 32 oz/A broadcast

Perk Plus

Company: Custom Chemicides, P.O. Box 11216, Fresno, CA 93772

Ingredients: 3-18-0 with smaller amounts of micronutrients with natural plant extracts and complexing agents

Claims: Improves root growth and plant stress

Petrik's Bio-Humic Gro-Lac

Company: Petrik BIO-HUMIC Supplies, Inc., 5875 Fleur Drive, Des Moines, IA 50321

Remarks: To be blended with liquid N, P or K fertilizer at 1 gal/100 gal fertilizer; use in conjunction with Wonder Life, Bio-Humic Agricultural Production Systems

PFE 2000

Company: Carbo-Tech America, 3514 W. Decker Chapel Rd., Decker, IN 47524

Ingredients: Glucose, fructose, maltose, dextrose, dextroglucose, dextrin, sucrose

Claims: Feeds soil bacteria; improves soil structure; conserves nitrogen

Remarks: Apply 16 oz/A with fertilizer or herbicide

PGR-IV

Company: Plant Growth Formulations, Inc., Box 2307, Gainesville, GA 30501

Claims: Improves soil conditions; enhances germination; promotes rooting and propagation; enhances mineral uptake; promotes plant resistance to the environmental factors of temperature and water

PGS-10 Plant Growth Activator (Possible alternative name: AgroLig)

Company: Hopkins Chemical Co., Box 7532, Madison, WI 53707

Ingredients: Mixture of carboxyl, phenolic and polyhydric acids 10%

Claims: Stimulates germination and nutritional activity, and soil microorganisms

Remarks: Use 1-2 gal/A broadcast, 0.5-2 qt/A row or foliar. Apparently extracted from coal-like deposits

Known Research: Kelling et al. (1988g); Edmeades (2002)

pH-Acidifier

Company: Interworld Inc., 2270 Camino Vida Roble, Suite H, Carlsbad, CA 92008

Ingredients: NaHSO₄ 94.7%, Na₂SO₄ 5%, H₂O 0.2%, Fe 0.04%

Claims: Increases yields by acidifying other fertilizers such as UAN or 10-34-0

pHas-act

Ingredients: Fine calcitic lime suspension 100% passing 200-mesh screen

Remarks: 500 lbs replaces 3 T aglime

pHix

Company: TerraMax, Inc., 16905 Aberdeen St., N.E., Ham Lake, MN 55304

Ingredients: Processed humates and peptides; salt water algae extract

Claims: Binds soluble salts; encourages microbial activity; reduces chloride levels

Remarks: Helps to reclaim sodium impacted soils

Phoenix AMC

Company: Phoenix Agricultural Group, P.O. Box 3769, Lawrence, KS 66046

Claims: Reduce N fertilizer need, increase yields

Known Research: Whitney et al. (1985a); Whitney et al. (1985b)

Phoenix VHC

Company: Phoenix Agricultural Group, P.O. Box 3769, Lawrence, KS 66046
 Ingredients: Apparently an extract of bacteria yeast and fungi 10% with various hormones and enzymes including adenine 0.0004%, indolebutyric acid 0.0004%, and indoleacetic acid 0.0004%
 Claims: Stimulates soil microbes, germination and plant growth; improves fertilizer efficiency; reduces N fertilizer need; improves moisture relations; increases yields
 Remarks: Apply at 1 gal/10 acres; similar compounds and amounts as those listed for AgroPlus
 Known Research: Whitney et al. (1985a); Whitney et al. (1985b)

Phosphobacterin

Ingredients: Bacterial preparation of kaolin carrying spores of *Bacillus megatherium* var. *phosphoticum*
 Claims: Frees soil organic phosphates
 Known Research: Smith et al. (1961); Laughlin (1964); Dunigan (1979)

Phos-pho-Germ

Company: Nitro-Phospho Corp., Richmond, VA
 Ingredients: A complete compost with added bacteria
 Claims: Adds nutrients, conditions soil, corrects pH
 Remarks: Use 300-1000 lb/A; is labeled a “bacterial soil vitalizer”

Phos Plus

Company: Western Sunburst Inc., 906 N. Carpenter Road, Suite C, Modesto, CA 95351
 Ingredients: A 5-17-0 “water run” phosphate

pH Plus

Company: World Agrisearch Corp., P.O. Box 59202, Dallas, TX 75229
 Ingredients: Ca-saturated organic chelating agent
 Claims: Releases calcium, decreases “free” soil hydrogen, improves soil physical condition
 Remarks: Liquid calcium soil conditioner; 1 gal. equivalent to 500-750 lb effective calcium carbonate

Phytozym 2-2-2

Company: Epicore Networks Inc., Suite 3070, Bow Valley Square II, 205 5th Ave., S.W., Calgary, Alberta
 Ingredients: Fertilizer derived from marine algae extracts and chelated micronutrients
 Claims: Improves stress resistance, increases crop yields, improves germination
 Remarks: Apply at 1 qt/A

Planta-gel

Company: Napera Chemical Company, Inc., Rt. 17, Harriman, NY 10926
 Ingredients: 99.5% potassium propenoate-propenamamide copolymers
 Remarks: Super-absorbent; mostly suggested for greenhouse use

Planteen

Remarks: Organic leaf conditioner; apparently mostly for household use

Planterra (See Agralife, Genesis II and Agrispon)

Company: Planterra International Corp., P.O. Box 59366, Dallas, TX 75229

Ingredients: Culture of bluegreen algae and heterotrophic bacteria associated with bluegreen algae

Claims: Stimulates N fixation and reduces N fertilizer need

Remarks: Use 0.1 gal/A

Known Research: Langer et al. (1979); Westerman (1985)

Planters II (Other versions include Planters and Planters III)

Company: U.S. Soil, Drawer 926, Salida, CO 81201

Ingredients: Trace mineral fertilizer containing Ca (5%); S (5%); Mg (0.5%); B (0.02%); Fe (0.4%); Co and Mo (0.0005%)

Claims: Supplement to primary plant food, improves soil physical condition

Remarks: Use 300-500 lb/A

Known Research: South Dakota (1963, 1964, 1970); Bauder (1976); Dow et al., (1976); Haby et al. (1980); Kelling (1980); Kelling (1988h)

Plant Helper

Company: Ag Tech Crop., 1380 N. Abby, Fresno, CA 93703

Ingredients: Liquid concentrate: *Trichoderma atroviride*, 8.0%; *T. virens*, 4.0%; flowable concentrate: *T. atroviride*, 10.9%

Claims: Stimulates plant growth and health through the entire growing season

Plant Plasma

Ingredients: Derived from fish and vegetable extracts plus humic acid and nutrients

Known Research: Edmeades (2002)

Plant Success

Company: Plant Revolution, 1235 N. Harbor Blvd., Suite 115, Fullerton, CA 92832

Ingredients: Humic acids derived from leonardite, cold water seaweed extract and mycorrhiza

Claims: Increases nutrient uptake and crop yield

Plen-T-4 Foliar spray

Company: Trico Ag Products Inc., Box 1104, Storm Lake, IA 50588

Ingredients: Blend of lactic acid, molasses, dried whey and kelp with Cu (0.5%); Fe (0.6%); Mn and Zn (0.7%)

Claims: Better emergence and root growth, higher yields

Remarks: Apply 1 gal/30 A. Also have seed treatment with slightly different formulation

Known Research: Christensen (1975); Kansas (1975a, 1976); Cmarik et al. (1976); Kaizer et al. (1977); McKibben (1977); Baker (1981)

Plen-T-4 Soil Conditioner

Company: Trico Ag Products Inc., Box 1104, Storm Lake, IA 50588

Ingredients: Ammonium alkyl ether sulfate 48%; alpha-pinene 4%

Claims: Eliminates wet spots, increases tile effectiveness, reduces runoff, easier tillage, increases yield potential

Remarks: Apply 2 oz/A with 1-20 gal water

Known Research: Hunt and Baker (1981)

Plexal

Company: Custom Chemicides, P.O. Box 11216, Fresno, CA 93772

Ingredients: Organic acid extract chelating agent

Claims: Improves effectiveness of fungicides and systematic insecticides

Plyac

Remarks: A wetting agent

Known Research: Doersch (1979)

Polverdol

Ingredients: Mixture of N, P, K and 11 trace elements plus vitamin B and hormones

Known Research: Edmeades (2002)

Polytox

Company: Polybac Corp,

Remarks: Apparently is a rapid microbial test for screening for toxicity

Potatoflo

Company: Soygro (Pty) Ltd., P.O. Box 5311, Rockspark, 2523 Belts Bricks Rd. No. 7, Mooibank, Patchefstroom, South Africa

Ingredients: A PGR inoculant

Claims: Increases yield and quality of tuber crops; increases amount of tubers; aids in the production of better root systems

Powerich

Company: Midstate Plant Food Company, Box 542, Ladd, IL 61329

Ingredients: Several formulations of fertilizer made from feed-grade urea, MAP and KNO_3 with micronutrients (Cu 0.05%, Fe 0.10%, Mn 0.09%, Zn 0.05%) added; are soluble plant food concentrates

Remarks: Apparently to be used at low rates along with regular nitrogen program

Power Tower

Company: Top Line Service Co., Box 56, Carthage, SD 57323

Ingredients: "Orthomolecular multiwave oscillating generator"

Claims: Adds energy to crops

PREMERGE (See Dinoseb)**Pro Cal** (See Pro-Green)

Company: Western Soils Co., 1107 South Street, Waterloo, IA 50705

Ingredients: Ca (18%), organic (5.6%), sulfur (17%), Mg (2%), Al and Fe (1%), SiO_2 (3.7%) and less (<0.3%) of 9 other elements

Claims: Nutrient source

Remarks: Mined deposit from an "enriched bed of anhydrite and gypsum which had part of the CaSO_4 replaced by MgSO_4 ," soluble rock phosphate, organic matter and oxides of iron and aluminum

Known Research: Dow et al. (1976)

Product F

Company: Western Sunburst Inc., 906 N. Carpenter Road, Suite C, Modesto, CA 95351
 Ingredients: Liquid fulvic acid

Product H

Company: Western Sunburst Inc., 906 N. Carpenter Road, Suite C, Modesto, CA 95351
 Ingredients: Liquid humic acid

ProfitPro; ProYield Crop Management System

Company: ProfitPro, LLC, 703 Marshall St., Albert Lea, MN 56007
 Remarks: Crop management system that may include biostimulants

Pro Germinator

Company: Agro Culture, 3026 W. M-21, P.O. Box 150, St. Johns, MI 48879
 Ingredients: 8-20-2 or 9-24-3 and other grades with micronutrients
 Claims: Faster development of roots and seedlings; faster crop emergence

Pro-Green (May be similar to Pro Cal)

Company: Western Soils Co., 1107 South Street, Waterloo, IA 50705
 Ingredients: Ca (18%), Mg (0.5%), S (14.2%), B (0.02%), Fe (0.1%)

Pro-Gro

Company: House of Pro-Gro, Box 1631, Fargo, ND 58107
 Ingredients: Trace minerals and micronutrients, hydrolyzed fish marine algae, seaweed, phosphoric acid, potassium hydroxide, lignosulfonates; to make 10-8-8 fertilizer; also contains labeled amounts of some micronutrients
 Claims: Increases yields
 Remarks: Apply at 1 to 1.5 qt/A as foliar spray

Promesol 30

Company: Carpenter Sales Inc., 10825 NE Hubbell Road, Bondurant, IA 50035
 Ingredients: Trihydroxy-glutaric acid 54%, Ca 25%, N 5%
 Claims: Aglime substitute; increases Ca availability
 Remarks: 1 gal equivalent to 500 lb to 750 lb effective CaCO₃
 Known Research: Iowa (1976); Colliver and White (1978); Flannery (undated); Overdahl (undated); Peck (undated)

Pro-Pel

Company: AgriEnergy Resources, 21417 1950 E. St., Princeton, IL 61356
 Ingredients: Pelleted blend of high calcium lime, colloidal phosphate, granite dust and humates
 Remarks: Apply 500-2000 lb/A

Pro-Yield

Company: Trans Chemic Industries, Inc., 150 Meadowland Parkway, Secaucus, NJ 07094
 Ingredients: 22% modified humate concentrate
 Claims: Improves water penetration; stimulates soil microbes; enhances retention of fertilizer; reduces fertilizer needs
 Remarks: Apply 0.5 to 4 gal/A
 Known Research: Whitney et al. (1988)

Psychotronic tuner

Company: Interdimensional Sciences, Inc., Georgia
 Remarks: Analyzes the soil using applied radionics by measuring the etheric energies

PT 21

Company: Ag Spectrum Co., P.O. Box 215, 602 First St., DeWitt, IA 52741
 Ingredients: Liquid urea (21% N) with a urease inhibitor added; enhanced by the "addition of multiple energy sources," and includes other enzymes, vitamins, and stimulants
 Remarks: Recommended rates vary from 4-20 gal/A

Pure

Company: Pure Plant Food International, Box 483, Sioux Falls, SD 57101
 Ingredients: Either 9-19-9 or 8-16-8 fertilizer
 Remarks: Advertised that 4 gal/A equal to 500 lb plant food

PZ1000

Company: Tainio Techology and Technique, Inc., S 12102 Andrus Rd., Rt. 2, Box 286, Cheney, WA 99044
 Remarks: A nutrient mixture to be applied at 2.66 oz/A to enhance nutrient utpake

Quantum-4000

Company: Gustafson Inc., P.O. Box 660065, Dallas, TX 75266
 Ingredients: Selected strain of *Bacillus subtilis*
 Claims: Reduces disease invasion of peanut root systems
 Remarks: For use with peanuts

Quick Kick

Company: Greater Yields International, P.O. Box 280, Verona, MS 38879
 Ingredients: 0-24-20 + S with growth regulators added
 Remarks: Use foliarly as supplement to normal fertilization

QuickRoots

Company: TJ Technologies, Inc., 805 32nd Ave., Brookings, SD 57006
 Ingredients: Mixture of *Bacillus subtilis* and *Trichoderma virens*
 Claims: Increases plant overall health; more root growth; greater nutrient intake; increases yield

R-101

Company: Gateway Marketing Group, 314 Main St., Murray, KY 41071
 Ingredients: Bacteria culture of *Lactobacillus*
 Claims: Accelerates the decomposition of animal waste and reduces odor

Radiant Blend

Company: Midwest Radiant Co., Seward, IL 61077
 Ingredients: A natural non-poisonous biotic soil builder activated with radiant bacteria, contains phosphate, potash, dolomitic lime and over 40 trace elements
 Claims: Neutralizes toxins and poisons, increased growth, and insect and disease resistance, soil loosened, increased crop food value
 Remarks: Apply about 200 lb/A
 Known Research: Walsh (1965)

RADIX

Company: FPG, Memphis, TN
 Ingredients: 6-24-6 with micronutrients at concentrations of 0.1% or less
 Remarks: Apply at 2-3 pts/A foliarly twice to potatoes and other root crops
 Known Research: Cattnach (1992b)

Reclaim

Company: AgPro Systems, Route 3, Box 376, Big Sandy, TX 75755
 Ingredients: Blend of enzyme substrates, polydimethylsiloxone, polyalkylene oxide and lignin polymers
 Claims: Detoxifies soil

Remedy (See Step 1)**Renew Plus**

Company: AgPro Systems, 318 W. Rusk St., Tyler, TX 75701
 Ingredients: Poly-co-ferment enzyme complexes, lignin polymers, humic acid, fructofuramosyl, kept extract, dimethylsiloxone, and non-ionic surfactants
 Claims: Increases yield; stronger root systems; better plant vigor; increased number of pods per plant; improves soil structure

Replenish

Company: Custom Chemicides, P.O. Box 11216, Fresno, CA 93772
 Ingredients: Amino acids, enzymes, natural plant extracts, and small amounts of micronutrients
 Claims: Increases aeration and tilth in fields; stimulates microorganism growth; converts essential nutrients into forms more available to plants

Residue, Residue DF

Company: AgriEnergy Resources, 21417 1950 E. St., Princeton, IL 61356
 Ingredients: Combination of manure tea, compost tea, humic acids and nutrients
 Remarks: Available in liquid or dry formulations; use at 3 lb or 2 gal/A

Residue Treat (See IAT Residue Treat)**Respond** (See Agrispon)

Company: United Agri Products Inc., 419 18th Street, Box 1286, Greeley, CO 80632
 Ingredients: 7.6 ppm vitamin B complex compounds; 3.4 ppm purine-like and adenine-like compounds; 2000 ppm trace elements
 Claims: More efficient N use, better drought resistance and growth, higher yields
 Remarks: Apply 1 to 1 1/2 pts/A foliarly
 Known Research: Maddux and Barnes (1985); Chase et al. (1986); Kelling et al. (1988e)

Response

Ingredients: Derived from seaweed and fortified with macro- and micronutrients
 Known Research: Edmeades (2002)

Restore (Several products including Foliage Plants, Tomato Booster and Compost Maker)

Company: Ringer Corporation, 6860 Flying Cloud Drive, Eden Prairie, MN 55343
 Ingredients: Mix of organic nutrients, bacteria and enzymes
 Claims: Rejuvenates tired soil, feeds plants, neutralizes harmful salts
 Remarks: Appears to be primarily sold for home and garden use

Revive

Company: American Chemical Works, 178 S. Kalemath Street, Denver, CO 80223
 Ingredients: Polyflavanoid complexes, plant byproducts, decomposition byproducts, ectylphemoxy and polyetchoxy complexes 25%; Na-dioctylsulfosuccinate 0.0012%
 Claims: Loosens tight soils, helps rooting systems, increases germination, reduces runoff and erosion
 Remarks: Recommended mostly for groundskeepers

Reward (See Respond)

Company: United Agri Products Inc., 419 18th Street, Box 1286, Greeley, CO 80632
 Ingredients: Labeled ingredients identical to Respond
 Remarks: Letter indicates this product is same as Agrispon and Nitro/Max distributed by different company
 Known Research: Rehm et al. (1985)

ReZist

Company: Stoller Enterprises Inc., 8580 Katy Freeway, Suite 200, Houston, TX 77024
 Ingredients: 2% copper, 2% manganese, 2% zinc plus polyamines
 Claims: Increases disease resistance
 Remarks: Apply foliarly at 2 qt/A

RGS

Company: Nulex, Inc., 1919 Grand Ave., Sioux City, IA 51106-57-8
 Ingredients: Ammoniacal nitrogen, 15.0%; zinc, 17.%; derived from ammonia and zinc oxide
 Claims: Promotes earlier growth of sturdier plants with larger, more vigorous root systems; increases nutrient uptake and yield
 Remarks: Use in anhydrous ammonia and liquid or dry fertilizers containing nitrogen; band at 5 fluid oz/A or broadcast at 10 fluid oz/A; N and Zn concentrations and rates are similar to ACA

Rico Verde

Company: Agronics Incorporated, 701 Madison St. N.E., Albuquerque, NM 87110
 Ingredients: 5-3-3 fertilizer with 3% S, 0.4% Zn, 0.3% Mn, and 0.1% Cu
 Remarks: A soil conditioning fertilizer blended to a Clodbuster base; label gives lawn and garden uses

RKR Soil Amendment

Ingredients: Apparently mined humate deposit from Montana
 Claims: Brings soil into balance, restores highest fertility, conditions soil
 Remarks: "A cover crop in a bag"

RL37 and RL3I

Company: Bio Com Industries Inc., 9201 Penn Ave. S., Suite 26, Bloomington, MN 55431
 Ingredients: Apparently are humates derived from leonardite
 Remarks: Two applications of 1 pt/A each are recommended (post tillage premerge and foliar or post harvest pre-tillage)

Rodak

Company: UTL Marketing Inc., P.O. Box 1903, Des Plaines, IL 60017
 Ingredients: Contains processed extracts of manures, bones, algae, sea plants, sesame straw, yucca juice, wheat straw, animal proteins, herbs/spices, potable water
 Remarks: Used for land reclamation/rebuilding, contaminated water clean-up; bioremediation programs; de-contamination of salt buildup; produces healthy, active microbial colonies in soils, water, and decomposition conditions

Root Partner

Company: Essential Minerals, Inc., 30400 Telegraph Road, Suite 308, Birmingham, MI 48010
 Ingredients: Ground limestone, dolomite limestone, rock phosphate and volcanic ash (20.5 to 24.5% Ca; 3.5% Mg; 1.3% P)
 Claims: Improves crop yields and animal health
 Remarks: Soil balancer; 100-200 lb/A used in row application; 200 lb/A broadcast

Roots

Company: Soilizer Corp., 25 Science Park, New Haven, CT 06511
 Ingredients: Combination of biostimulants including humic acids and marine algal extracts with fertilizer
 Remarks: Mostly sold for turf and greenhouse uses
 Known Research: Berlyn and Russo (1990); Heckman (1990; 1994; 1995)

ROW Prod

Company: PROD Inc., P.O. Box 9272, Moscow, ID 53843
 Ingredients: 3-10-3
 Remarks: Apply at 1.5 gal/A banded for potatoes or sugar beets
 Known Research: Secor et al. (1991)

Ruhm Phospate Rock

Company: Ruhm Phospate & Chemical Co., Box 361, Columbia, TN 38401
 Ingredients: 30% total P₂O₅ with minor amounts of 18 other elements listed
 Remarks: 85% passing 300-mesh screen

Samoset Sea Crop

Company: Samoset Seaweeds, Boothbay, ME 04537
 Ingredients: Made from seaweed, *Ascophyllum nodosum*
 Claims: Stimulates roots, increases soil bacteria, helps retain soil moisture

Saturall

Company: Conklin Co., 4660 W. 77th Street, Minneapolis, MN 55435
 Remarks: Apparently a wetting agent
 Known Research: Sunderman (1978); Lawless et al. (1981); Sunderman (1983)

Saturex (Possible alternative names: Like Wild)

Company: Chemical Dynamics Corp., Chicago, IL 60640; also other marketing companies
 Ingredients: Metal salts of Cu (0.05%); Fe (0.57%); Mn (0.4%); Zn (0.17%) and S (1.0%) combined with polyflavonoids
 Claims: Increase water penetration, improve plant color
 Remarks: Other products may include urea or simply a wetting agent

Score

Company: Ag Specrum, P.O. Box 215, 602 1st St., DeWitt, IA 52742
 Ingredients: Calcium, boron
 Claims: Provides necessary nutrients to maturing plants

Sea-Born; Sea-Born + F

Company: Sea-Born Inc., Charles City, IL 60616
 Ingredients: Blend of soluble seaweed extract and hydrolyzed fish fortified with urea, H₃PO₄ and KOH to make either 6-3-3 or 12-6-6
 Claims: Source of nutrients, activates soil bacteria, enhances N fixing bacteria, helps release soil nutrients
 Remarks: "At least 6 lbs of hydrolyzed fish/gal." Use at 1 qt/A with seed and 1 qt/A foliar
 Known Research: Indiana, cited in Overdahl (1975); Benson and Anderson (1978); Kelling et al. (1978, 1980); Peterson (1979); Kelling (1980); Lessman and McCutchen (1980); Edmeades (2002)

Sea Crop 16

Company: Atlantic Laboratories Inc., Waldoboro, ME 04572
 Ingredients: Seaweed extract containing cytokinins
 Known Research: Lessman and McCutchen (1980); Gupta and MacLeod (1984); Edmeades (2002)

Sea Leaf

Company: TransNational Agronomy LTD, 470 Market Street SW, Suite 101, Grand Rapids, MI 49503
 Ingredients: A 4-1-1 fish and seaweed fertilizer
 Remarks: To be used as a fertilizer supplement

Sea Life

Company: Glacier Natural Products and Research Inc., P.O. Box 569, Polson, MT 59860
 Ingredients: Processed Norwegian kelp

Seamac

Ingredients: Seaweed extract containing 66 mg/L cytokinin and trace elements
 Known Research: Edmeades (2002)

Seaquist (Labeled identically to Lactobase)

Company: R&S Davis, 9869 M-78, Haslett, MI 48840; also other distributors
 Ingredients: High molecular weight protein; 28% dry matter; 6.5% protein; 0.4% fat; 3% ash; 18% NFP; 72% moisture
 Claims: Increase production, seedling growth
 Remarks: Can be used as root dip, seed treatment, soil or foliar application
 Known Research: Murphy et al. (1978)

Seasol

Ingredients: Natural growth stimulants derived from Tasmanian kelp
 Known Research: Edmeades (2002)

Seed-gro

Company: Company unidentified, Box W-117, 22 Cortlandt Street, New York, NY 10007
 Ingredients: An unclassified ore from “volcanic cauldron and hydrothermal geyser alteration, permeation and enriched with... nutrients.”
 Claims: Increase yields, quality, germination, root structure, stops soil crusting, neutralizes harmful sodium
 Remarks: “A seed nutrient germinator”

Seed Prod (Possible alternative name Alga-Min+)

Company: PROD Inc., 1605 Lamhi Dr., P.O. Box 9272, Moscow, ID 83843-1772
 Ingredients: 2-11-5 derived from potassium nitrate and potassium phosphate
 Claims: Improves germination and early root development
 Remarks: Use 1.6 to 3.2 oz/100 lb seed; is to be used in supplement to normal fertility program
 Known Research: Farber (1992)

Seed Starter Foliar Spray (See Echol West)**Seed Treat** (See IAT Seed Treat)**Seed Treatment +** (See Cytozyme)**SETT**

Company: Stoller, Inc., 8582 Katy Freeway, Suite 200, Houston, TX 77024
 Ingredients: 8% Ca and 1% B derived from calcium sucrose and sodium borate
 Claims: Reduces localized ethylene production; increases fruit set; reduces damage to fruit storage tissue
 Remarks: Recommended for horticultural crops at 2-4 qt/A at regular intervals

Shur-Crop

Company: Hi-Bar Ltd., P.O. Box 2075, 1825 Kusel Road, Oroville, CA 95965
 Ingredients: Biocatalytic agents fortified with enzymes; 2.5% crude protein; several vitamins
 Claims: Fertilizer and chemical substitute, conditions soil, reduces insects, weeds and disease, reduces plant water needs
 Remarks: “Digests and/or emulsifies the molecular shrouds which encapsulate elements locked in an otherwise dormant soil”
 Known Research: Kelling et al. (1988b)

Shur-Gro

Company: Canton Mills Inc., 160 Mill St., P.O. box 97 Minnesota City, MN 55959
 Ingredients: A natural organic blend fertilizer, may be fortified with phosphate, potash or nitrogen
 Claims: Conditions soil, encourages earthworms and beneficial bacteria, increased yield and quality
 Known Research: South Dakota (1972); Holcomb et al. (1976)

Siapton

Ingredients: Extract of animal offal containing 18 amino acids with proteins plus nutrients
 Known Research: Edmeades (2002)

Sidekick

Company: Conklin Co., Inc., 551 Valley Park Dr., Shakopee, MN 55379
 Ingredients: 0-0-25-17S fertilizer
 Remarks: Apply at green-up and 7 days after each alfalfa cutting at 2 qt/A
 Known Research: Hall et al. (2002)

Slo-go (See SRC 101)**SM-3**

Company: Atlantic and Pacific Research Inc., P.O. Box 14366, North Palm Beach, FL 33408
 Ingredients: Cytokinin at activity of 0.80 mg/L
 Claims: Improves germination, reduces damping off, gives stronger root systems, higher yields and quality, mobilizes nutrients into the leaves
 Remarks: "World's finest liquid seaweed"
 Known Research: Dwelle and Hurley (1984); Edmeades (2002)

Soak 'N Store

Company: Bio/Syn Research Associates, Inc., P.O. Box 451, West Des Moines, IA 50265
 Ingredients: Contains "natural chelating humic and algin acids and special strains of soil bacteria and enzymes"
 Claims: Reduces crusting and erosion; improves moisture holding capacity and drainage; softens soil; increases cation exchange capacity
 Remarks: Use 8-16 oz/A for field crops; may sometimes use prefix of Harvest-Mor in name

SOECO Soil Inoculants

Company: Soil Enterprise Corp., P.O. Box 128L, Stoneville, MS 38776
 Ingredients: Azotobacter inoculant in peat carrier
 Claims: Increased yields and quality, earlier emergence, greater root and shoot development, more stress resistance
 Remarks: Bacteria produce gibberelin and indoleacetic acid
 Known Research: Jones and Collins (1979)

Soil+ (See Cytozyme)**Soil-A-Zyme**

Known Research: Grabouski and Wiese, cited in Overdahl (1975)

Soil Drain

Company: Complete Green Co., 2066 Westwood Blvd., Los Angeles, CA 90025
 Claims: Improves soil physical condition and drainage characteristics
 Remarks: Apparently is a starch-based copolymer; is not a superabsorbent

Soil-Gard

Company: Farmcraft Inc., P.O. Box 1431, Des Moines, IA 50305
 Ingredients: Ca, P, K base with trace elements including Fe, Cu, Mn, Mg, Co, B, Zn, S, Mo, Na, and Cl
 Claims: Trace element source
 Remarks: Use 200 lb/A once every 3 years

Soil Inoculant (See Agralife)

Company: World Agrisearch Corp., P.O. Box 59202, Dallas, TX 75229
 Ingredients: Mix of Clostridium, Azotobacter and blue-green algae
 Claims: Decomposes residues, builds soil humus and accelerates the nitrogen cycle
 Remarks: Appears to be similar to Agralife, etc.
 Known Research: Langer et al. (1979, 1980)

Soil Life Plant Food

Company: Soil Life Research Co., Box 132, Paw Paw, IL 61353
 Ingredients: A 5-10-10 fertilizer with Ca (16%), Mg (0.5%), S(6.2%) and small amounts of Cl, Co, Cu, Fe, Mn, Mo, Na, and Zn present
 Remarks: A naturally mined product with contents resulting from chelation of metals and hydrolyzed proteins

Soil Life 300

Company: Stabilizadon Chemicals
 Ingredients: Ferment (92%), polyoxyethylene ester (2%); alkyl aryl polyethylene glycol (6%)
 Claims: Increases moisture retention, breaks up compacted soils, releases trapped nutrients
 Remarks: "Biocatalytic" liquid soil conditioner for in-depth water penetration

Soil Master

Company: Soil-Engineering Co., P.O. Box 166, West Palm Beach, FL 33402
 Ingredients: Micro-biotic-enzyme with trace elements added
 Claims: Better flavor, growth, higher quality
 Remarks: Substitute for commercial fertilizer; some effect on N fixation implied

Soil Nu

Company: Hoover Soil Service, Gilman, IL 60938
 Ingredients: Organic compost 32%, minerals 64%, moisture 4%; lists 22 elements present
 Claims: Higher yield and quality, supplies trace elements; neutralizes alkaline soils

Soil Pam and Soil Pam L

Company: Earth Chem, P.O. Box 272627, Fort Collins, CO 80527
 Ingredients: 90% copolymer of acrylamide/sodium acrylate; "L" formulation is only 30%
 Remarks: Earthbound and Earthbound L soil stabilizer and mulch tackifier labeled identically

Soil Penetrant 80

Company: Grow More, Cadena, CA
 Ingredients: Nonylphenol polyethoxylate, isopropyl alcohol, oleic acid
 Remarks: Surfactant
 Known Research: Feng et al. (2002)

Soil Rebuilder (Advertising wording similar to Revive)

Company: Agro Chem Inc., P.O. Box 59225, Chicago, IL 60659

Ingredients: Plant by-products, organic extracts and decomposition by-products

Claims: Encourage deep rooting, opens compacted soils, improves aggregation

Soil-Re-New (Also spelled Soil-Re-Nu)

Company: Bio-Tech Agri Service, Rt. 2, Box 100, Rockwell, IA 50469

Remarks: A soil growth regulator and detoxifier; use at 4 oz/A 10-14 days before planting

Soil Restore, Nutrapathic Soil Restore

Company: Parametric Associates, Inc., 10934 Lin-Valle Dr., St. Louis, MO 63123

Claims: Increases CEC, soil organic matter, and soil microbes

Remarks: Soil conditioner with mycorrhizal stimulants added

Soil Tec Acid

Company: Bio Soil Tec Management Inc., P.O. 13, Pontiac, IL 61764

Ingredients: Carboxyl, phenolic and polyhydric acids 10% (ingredients identical to PGS-10)

Claims: Enhances soil and foliar nutritional activity and soil microorganisms; reduces compacted conditions

Remarks: A plant growth activator to be used at 1-2 gal/A on soil or 1-2 qt/A foliar

Soiltrate (Possible alternative names: Super-Gro)

Company: Farmcraft Inc., P.O. Box 1431, Des Moines, IA 50305

Ingredients: Activated compost sludge, soft phosphate, potash, N fixing bacteria and vitamin B12 supplement

Claims: Better roots, earlier maturity, helps soil build humus

Remarks: For corn use 150-200 lb/A in planter and 200 lb/A broadcast

Soil Treat (See IAT Soil Treat)**Soil Treatment** (See National Ag Soil Treatment)**Soil Triggrr** (See Triggrr)**SOL-EZ**

Company: C&E Products Inc., Box 182A, Rt. 3, LeMars, IA 51031

Ingredients: Soluble whey extract, kelp, and sulfates of Cu, Mn, Fe and Zn (0.1%) and S (1.5%)

Claims: Improves structure, water penetration and creates a better plant environment

Remarks: Apply 4 oz/A mixed with 1-2 gal of water; for compacted, wet, gumbo-like soils

Known Research: Kansas (1975b, 1976); Randall, cited in Overdahl (1975); Sunderman (1978); Lawless et al. (1981); Sunderman (1983)

Sonic Bloom

Company: Don Carlson Scientific Enterprises, Inc., 708 119th Lane NE, Blaine, MN 55434

Ingredients: Organic spray of 55 trace minerals and amino acids sprayed while a high-frequency tape is playing

Claims: Increased nutrient uptake; increased yields; earlier germination; greater stress resistance

Remarks: The sound is to stimulate the uptake of growth-promoting substances and nutrients

Known Research: Becker and Ralston (1989)

Sorba Sprays

Company: Leffingwell Chemical, Co., Brea, CA 92621

Ingredients: Various foliar sprays containing macro- and micronutrients, e.g. 10-12-10, 2% Zn; 0-16-9, 1% Zn

Remarks: Apply at low rates per acre (such as 1-2 qt/A), sometimes in multiple applications

Soyboost

Ingredients: N-P-K, micronutrients, humic acid, plant activators, surfactants

Claims: Increases yield; resists fungal and blight diseases of soybean

SP-1

Company: AgriEnergy Resources, 21417 1950 E. St., Princeton, IL 61356

Ingredients: Combination of manure tea, compost tea, and humic acid

Spark (See Dinoseb)**Spectrum Plus**

Company: Alpha Research and Development

Ingredients: Is a whole fish fertilizer; no grade given

Claims: Increased yield and quality, earlier harvest, and improved soil physical conditions

Remarks: Is not a fish emulsion but whole fish fertilizer

Sper Sal

Company: Sotac Corp.

Ingredients: 30% polymaleic acid; 6% linear alkylbenzene sulfonate

Claims: Soil conditioner

Spewxzyme

Company: Ehlert Enterprises, P.O. Box 4143, St. Joseph, MO 64505-0143

Claims: Aids in water infiltration and eases tillage

Spray-N-Grow

Company: Spray-N-Grow, P.O. Box 2137, 20 Hwy 35 S., Rockport, TX 78382

Ingredients: Micronutrient complex cultured in water base with 18 elements listed, highest is 1026 ppm Fe and 5110 ppm Na

Claims: Greater fruit set; causes up to 200% yield increase; increase beneficial soil organisms

Remarks: Is a "biocatalyst which activates dormant soil microorganisms"

SPUD Prod

Company: PROD Inc., P.O. Box 9272, Moscow, ID 83843

Ingredients: 8-25-14

Remarks: Uses 1 oz/250 lb potato seed

Known Research: Secor et al. (1991)

SRC 101 (Also Slogo, see Extend)

Company: Scientific Research Corp., Box 786, Alva, OK 73717

Claims: Reduces drift; protects herbicides from uv damage, prevents leaching of chemicals

Known Research: Webb (1976, 1977)

SSO

Company: Distributors Processing Inc., 17656 Avenue 168, Porterville, CA 93257

Ingredients: Sarsaponin (10%), CuSO₄ as preservative (0.1%)

Claims: Reduces compaction and stress, lowers surface tension and increases cell wall permeability, improves nutrient uptake

Remarks: Advertised for turf and ornamentals

ST-4

Company: AgriEnergy Resources, 21417 1950 E. St., Princeton, IL 61356

Ingredients: Combination of manure tea, compost tea, and fulvic acid

Stabl-U

Ingredients: 46-0-0-Ca trace derived from urea around a seed of Ca

Claims: More efficient source of N

Stand

Company: Stoller Chemical Co., Inc., 8582 Katy Freeway, Suite 200, Houston, TX 77024

Ingredients: 15-0-0 with 8% Ca derived from calcium monocarbamide monohydrogen chloride and urea

Claims: Increases seeding vigor and resistance to root rot diseases

Remarks: Apply 2-5 gal/A in seed furrow at planting

Stay Phos (See Trans National Agronomy)**Step 1**

Company: B and S Research Inc., 8092 Comet Rd., Embarrass, MN 55732

Ingredients: Only trace elements listed (Cu 0.05%, Fe 0.10%, Zn 0.05%)

Claims: Apparent microbial detoxifier

Stimufol

Ingredients: Mixture of amino acids from plants with NPK and trace elements

Known Research: Edmeades (2002)

Stimulate

Company: Stoller Chemical Co., Inc., 8582 Katy Freeway, Suite 200, Houston, TX 77024

Known Research: Oplinger (1990b); Whitney and Gordon (1998); Hall et al. (2002); Pavlista (2002); Schwartz (2002)

Stockosorb Agro (Agro F)

Company: Stockhausen Inc., 2401 Doyle St., Greensboro, NC 27406

Ingredients: Potassium polyacrylate (polyacrylamide copolymer)

Claims: Increases water retention in soil; improves yields

Remarks: Agro F is finer granules for use with liquid fertilizers

Known Research: Thompson (1997, 1998b, 1999b, 2000)

Stockopam (Pam MDL)

Company: Stockhausen Inc., 2401 Doyle St., Greensboro, NC 27406

Ingredients: Sodium polyacrylate/polyacrylamide

Claims: Strengthens soil cohesion; preserves surface roughness; reduces erosion

Remarks: MDL can be used in both gravity-flow and center pivot applications while regular Pam can be used in only gravity-flow application

Stress-Plus

Company: Marketed by Canton Mills, Inc., P.O. Box 465, Minnesota City, MN 55959
 Remarks: Apparently one of the Harvest-Mor plant regulators

Stubble Digestor + (See Cytozyme)**SummerSet**

Company: TerraMax, Inc., 16905 Aberdeen St. N.E., Ham Lake, MN 55304
 Remarks: Multipurpose foliar fertilizer

Sunburst

Ingredients: 5-15-5
 Remarks: Apply at 1-2 pt/A
 Known Research: Infante-Casella et al. (2002)

Sun-Down plus S

Company: Sulfa-Mate Products Co., P.O. Box 2457, Waterloo, IA 50704
 Ingredients: A 11-10-3-10S fertilizer
 Claims: Advertised primarily as sulfur source
 Remarks: For corn apply 1 qt/A at planting and reduce starter 50% and foliarly apply 1 qt/A

Sun-Net Foliar Spray

Company: Bio-Syn Research Associates, Inc., P.O. Box 451, West Des Moines, IA 50265
 Ingredients: Derived from marine algae containing trace elements and alginic acid
 Claims: Increases yield, resistance to stress and plant vigor
 Remarks: "It is similar to Germ 'N Boost with a few modifications"

Sunrane (Possible alternative name: Eco-Gro)

Company: Sunrane Inc., 777 Conrad Tower, 444 Cedar St., St. Paul, MN 55101
 Ingredients: 8-8-8 fish and seaweed fertilizer (4% seaweed)
 Remarks: Ideally balanced for leafy feeding for most field crops; applied at 1 qt/A foliar; may be similar to Eco-Gro and Greenworld

Super 28 and Super 28+

Company: Cropchem Mfg. Co., P.O. Box 1473, Decatur, IL 62525
 Ingredients: 18% urea ammonium nitrate solution fortified with 3% humic derivatives; same for 28+ but also includes Fe, 0.3%; Mn, 0.4%; and Zn, 0.3%
 Claims: Stimulates plant activity and rate of weed kill
 Remarks: Apparently to be used as adjuvant with herbicides at rate of 1-2 qt/A

Super Action

Company: U.S. Ag Associates, Inc., P.O. Box 770084, Houston, TX 77215
 Ingredients: Flowable sulfur (64% S) and humic acid (0.25%)
 Claims: Increase yields and improve fertilizer efficiency

Super-Bio

Company: Soil Enterprise Corp., P.O. Box 128L, Stoneville, MS 38776
 Ingredients: Manure leachate plus N fixing bacteria

Remarks: Liquid organic soil conditioner; may be other products from different companies using the same name

Known Research: Lessman and McCutchen (1980)

Superboost +, Superboost I and Superboost II

Company: Cropchem Mfg. Co., P.O. Box 1473, Decatur, IL 62525

Ingredients: These are 5-15-0 with complexed plant activators and auxiliary agents plus vegetable oils (+), soybean oil (I) or corn oil (II); small amount of micronutrients also present Fe 0.4%, Mn 0.2%, Zn 0.3%

Claims: Helps plant reproduction, build soil structure, increase nutrient uptake and maximize yields

Super-Dew

Company: Bio-Catalytic Corp.

Ingredients: Unspecified biological catalyst in clear bluish solution

Claims: Allows plants to use nutrients more effectively

Superfloc A-836

Company: Cytec Industries Inc., 5 Garret Mountain Plaza, West Patterson, NJ 07424

Ingredients: 80% acrylamide/sodium acrylate copolymer

Claims: Reduces erosion during furrow irrigation

Remarks: Apply 1 lb in irrigation water

Super-Gro (Possible alternative name: Soiltrate)

Company: Northern Field Seed Co., Winona, MN 55987

Ingredients: Activated animal compost, 40% soft phosphate, 20% glauconite, N fixing bacteria and Vitamin B12 supplement

Claims: Faster germination, better roots, earlier maturity

Remarks: Wording in flyer same as with Soiltrate

Known Research: South Dakota (1960, 1961); Walsh (1965)

Super-Hume

Company: National Ag Products Development, Inc., 1235 100th St. SE, Byron Center, MI 49315

Ingredients: Humic acid concentrate extracted from leonardite

Claims: Acts as a growth stimulant, catalyst and buffer

Remarks: 1 qt/A replaces 200-500 lb/A of dry humate material

Super-Hume + Ca

Company: National Ag Products Development, Inc., 1235 100th St. SE, Byron Center, MI 49315

Ingredients: Base of humic acid extracted from leonardite with chelated Ca added (8% Ca)

Claims: Stimulates soil bacteria; helps unlock soil Ca

Supernate

Company: Ro-Chem Corp., Houston, TX

Ingredients: Microbial inoculant and activator

Claims: Stimulate native organisms

Known Research: Weaver et al. (1974); Weaver (1979)

Supernatant

Known Research: Murdock et al., cited in Overdahl (1975)

Super Shot 40

Company: Cropchem, Mfg., T-50 Scientific Systems, Inc., Box 1473, Decatur, IL 62525

Ingredients: 15% active humic acids and adjuvant (alkyl aryl polyether alcohol)

Claims: Stimulates crop vitality and growth; reduces amount of herbicide needed; increases tolerance to withstand foliar burn

Remarks: To be used in combination with herbicides except 2,4-D or other phenoxy types

Super Slurper

Ingredients: Acrylic compounds chemically linked to cereal grain starches

Remarks: Is a super absorbent polymer; may have application in greenhouse or horticultural work

Known Research: Stone (1981)

Super Start +

Company: Cropchem, Box 1473, Decatur, IL 62525

Ingredients: 3-9-0 with plant activators and auxiliary agents

Claims: Increases germination, roots, nutrient uptake, moisture holding capacity and earthworm and bacterial population

Remarks: Use at 3-4 qt/A in band or 3-5 gal/A broadcast

Sure-K

Company: Agro-Culture Liquid Fertilizer, 3026 W. M-21, P.O. Box 150, St. Johns, MI 48879

Ingredients: 2-1-6

Claims: High-performance potassium fertilizer; low salt, non-chloride compound

Surge

Company: Helena Chemical Co., Memphis, TN 38137

Ingredients: Alkanolamine salts of dinoseb (2-sec-butyl-4-,6-dinitrophenol), 1.45%

Claims: Growth stimulant

Sur-Tec

Company: Tech Ag, Inc., 71912 Nighthawk Trail, P.O. Box 755, McCook, NE 69001

Ingredients: Concentrated liquid ammonium sulfate, anti-foaming agent, pH buffer, non-ionic surfactant, water softener, plant stickers, plant penetrators, enzyme crop protector

Claims: Maximizes efficiency of chemical spray solutions

Symbex (Alternative name IAT Soil Treat)

Company: Agro K Corp., 6120 Earle Brown Dr., Minneapolis, MN 55430

Ingredients: Microbial culture of *Actinomyces thermophilus*, *Azotobacter chroococum*, *Mixobacteria* sp., *Streptomyces*, *Fulvourides* and *Bacillus* sp. in a whey base

Claims: Stimulates residue decomposition and accelerates non-symbiotic N fixation, boost yields, increase soil humus

Remarks: Usually used in combination with Symcoat, Symspray, and Symbooster for total program

Known Research: Langer and Randall (1979); Kelling (1980); Kelling et al. (1979a, 1979b, 1980); Boswell (1981); Kallis (1981); Nelson et al. (1981); Randall (1981); Wolkowski and Kelling (1983); White and Sanderson (undated)

Symspray (See IAT Foliar Spray)

Symcoat (See IAT Seed Treat)

Known Research: Wolkowski and Kelling (1983)

Symbooster (See IAT Soil Treat)

Known Research: White and Sanderson (undated)

T-22 PlanterBox

Company: BioWorks, Inc., 122 North Genesee St., Geneva, NY 14456

Ingredients: Trichoderma harzianum, Rifai strain KRL-AG2

Claims: Controls plant diseases

Remarks: Biological fungicide

Known Research: Nafziger (2001)

Terralyt Plus

Company: Marketed by North America Petroleum, 9325 N. 107th St., Milwaukee, WI 53224

Claims: Increases yields and quality; reduces fertilizer need; is a biostimulant; increases nutrient uptake

Remarks: Claims to be a soil reactivator which has an electrolytic effect in the soil and increases the earth's electrical field

Known Research: Schulte et al. (1990)

Terramate

Company: Bio-Line Inc., 9201 Penn Ave. S, Suite 26, Minneapolis, MN 55431

Ingredients: Concentrated liquid humate derived from leonardite and six species of seaweed fortified with soda ash, MgSO₄, NH₄OH, Ca(OH)₂, and castor oil

Claims: Stimulates soil organisms; releases soil nutrients; releases excess soil chlorides

Remarks: Recommended to apply 1 pt/A every 6 weeks during growing season

Terra-salvo (Apparently is similar to Agralife)

Terra Soft

Company: TerraMax, Inc., 16905 Aberdeen St., N.E., Ham Lake, MN 55304

Ingredients: Fertilizer supplement with solubilizer

Remarks: Useful as wetting agent and soil penetrant

Terra-sorb

Company: Industrial Services International, Inc., P.O. Box 10834, Bradenton, FL 33507

Ingredients: Gelatinized starch-hydrolyzed polyacrylonitrile graft copolymer using KOH

Remarks: Is a super absorbent polymer; suggested field use at 1-3 lb/100 running ft applied with starter fertilizer

Thad's B-4

Company: Thad, Inc., R#1, Box 268, Arcadia, WI 54612

Ingredients: Liquid fish, urea, ammonium polyphosphate nitrate and marine gels

Claims: Promotes growth and high yields

Remarks: For corn, use 1 qt/A with starter; 1 qt/A foliar

Thrust

Company: Custom Chemicides, P.O. Box 11216, Fresno, CA 93772
 Ingredients: Zinc sulfate and organic acids (2% Zn)
 Claims: Reduces plant stress from herbicide applications

TJ Micromix

Company: TJ Technologies, Inc., 805 32 nd Ave., Brookings, SD 57006
 Ingredients: Granular base mix containing calcium, 2%; magnesium, 0.8%; sulfur, 8%; boron, 0.35%; copper, 0.8%; iron, 1.8%; manganese, 1.5%; zinc, 5.5% or in liquid chelate containing calcium, 0.7%; magnesium, 0.3%; boron, .1%; iron, 0.6%; manganese, 0.5%; zinc, 0.9%
 Claims: Consistent yield response; easy to apply
 Remarks: Best used in a starter fertilizer program
 Known Research: Bly et al. (1997c, 1999)

T.M. Fertilizer

Company: Gyro Products Inc., P.O. Box 7146, Colorado Springs, CO 80933
 Ingredients: An organic trace mineral fertilizer from “marcasite clay” with guaranteed analysis of B 0.02%, Co 0.0028%, Cu 0.12%, Fe 2.5%, Mn 0.24%, Mo 0.0005%, Zn 0.48%, S 2.50%
 Claims: Stimulates microorganisms, reduces N needs, builds soil physical condition, increases plant resistance to pests
 Remarks: Normal rate 200 lb/A; “Clanite” base releases nutrients as needed

Touchdown

Company: Ag Spectrum Company, P.O. Box 215, 602 First St., DeWitt, IA 52741
 Ingredients: Contains 2% Ca, 4% S, 0.15% B, 0.005% Cu, and 0.1% Fe, Mn and Zn derived from soluble potassium; Cu, Fe, Mn, Zn chelates, EDTA, ammonium thiosulfate, and sodium organic borate complex
 Remarks: “Designed to provide necessary nutrients for a maturing crop;” normal rate is 5 lbs/A made into solution

TRA 0155

Company: Terra Industries, Inc., Bloomington, IL
 Known Research: Kelling et al. (1998)

Trans National Agronomy

Company: Trans National Agronomy LTD, 470 Market St. SW, Suite 101, Grand Rapids, MI 49503
 Ingredients: A variety of products including: Trans Crop, a microscopic cover crop; Trans Flo, a soil-water adjuvant containing ammonium laureth sulfate; Trans Hume, an adjuvant for herbicides and liquid fertilizer; Trans Wetter, a compatibility agent; Nitro Mike, a stubble digester; Trans Sol-U Blend, dry soluble fertilizers, Trans Cal, liquid calcium, 8% Ca; Trans Sul, liquid sulfur, 26% S; Stay Phos, a 0-16-0 to be applied at 1 gal/A
 Remarks: Some products appear to be similar to others marketed under different labels

Trazco (Wide variety of products including Soil Penetrant; 2 Plus Soil Inoculant; ST170 Seed Treatment; ST171 Seed Treatment; Calciton Zymate; Wetting Agent; Mg, B, Fe, Mn, Zn and Cu Zymates; All Crop Zymate; and B79 Nutrient Spray)
 Company: CDA Inc., 1747 N Country Club Rd., Indianapolis, IN 46234
 Ingredients: Varies with product, micronutrients in chelated form
 Claims: Claims vary with product
 Remarks: Nutrient sprays have guaranteed analysis but used at very low rates, e.g., B79 Nutrient spray is 12-6-15 to be used at 4 oz/A
 Known Research: Kelling and Weis (1978); Walsh and Moncrief (1978); Kelling et al. (1979a)

Tri 40 Liquid Plant Food

Company: Scope Chemicals
 Ingredients: 10-20-10 made with KOH
 Claims: Low salt fertilizer

Triacontonal

Ingredients: $[\text{CH}_3(\text{CH}_2)_8\text{CH}_2\text{OH}]$
 Remarks: Plant growth regulator
 Known Research: Reis et al. (1978); Regehr (1982)

Triggrr

Company: Westbridge Agricultural Products, 9920 Scripps Lake Dr., Suite 103, San Diego, CA 92131
 Ingredients: 0.012% cytokinin as kinetin derived from a blend of fermentation products, marine algae derivations, an aqueous plant extract, natural saponins and micronutrients
 Claims: Increases yields
 Remarks: Another label is on file that indicates it contains low amounts of Mg, Fe, Mn, and Zn; use at 2-8 oz/A in multiple applications
 Known Research: Spidle (1987b); Henninger (1999; 2000); Edmeades (2002); Infante-Casella (2002)

Triton X-100

Company: Union Carbide, Houston, TX
 Ingredients: Octylphenol ethoxylate (a nonionic wetting agent)
 Known Research: Karagunduz et al. (2001)

Tronic

Remarks: Apparently a wetting agent
 Known Research: Doersch (1979)

Turface

Company: IMC, 666 Garland Place, Des Plaines, IL 60016
 Ingredients: Montmorillonite clay
 Remarks: Used for soil conditioning

Turf Tonic

Company: National Chemsearch, 2727 Chemsearch Blvd., Irving, TX 75062
 Ingredients: Synthetic surfactants
 Claims: Prevents compaction, eliminates runoff, and dry spots

Turf Touch

Company: Custom Chemicides, P.O. Box 11216, Fresno CA 93772
 Ingredients: Organically complexed nutrients, amino acids and enzymes
 Claims: Improves growth and activity of microorganisms

Turf Vigor

Company: Sybron Biochemical, 111 Kesters Mill Rd., Salem, VA 24153
 Ingredients: A 9-3-6 microbe/nutrient complex including kelp extract and humic acid
 Claims: Improves plant nutrient use efficiency and resistance to stress

UAP 86A

Company: United Agri Products, Greeley, CO
 Known Research: Whitney and Lamond (1988)

ULTRA-TILL

Company: National Ag Products Development, Inc., 1235 100th Street S.E., Byron Center, MI 49315
 Remarks: A soil activating and nutrient releasing agent; use at 1 gal/10 acres

Vantage

Company: Custom Chemicides, P.O. Box 11216, Fresno, CA 93772
 Ingredients: Formulated from organic acids, natural plant extracts, nonylphenalethoxylate
 Claims: A nonionic spray adjuvant

VHC (See Phoenix VHC)**Visible**

Company: AgTime Company, Inc., Jennings, FL 32053
 Ingredients: Secondary alcohol ethoxylates
 Claims: Soil penetrant; root-uptake enhancer; drought-stress reducer

Vitazyme

Company: Vital For Health/PleazAll, Inc., 302 N. Cotton St., Gladewater, TX 75647
 Ingredients: Contains "metabolic trippers"
 Claims: Increases crop yields and profits; improves crop quality; reduces fertilizer nitrogen inputs; hastens germination and maturity; improves soil structure and infiltration

VolCanaPhos

Company: Midwestern Bio-Ag, 10851 Hwy. ID, Box 160, Blue Mounds, WI 53517
 Ingredients: Igneous apatite, 30-40% P₂O₅
 Claims: Stable source of phosphorus; stimulates biological activity and growth

Watch Us Grow

Company: Stephen Follett Co., Inc., Egg Harbor, WI 54209
 Ingredients: 8-8-8 fertilizer with six micronutrients (not on label) and Fol-ade (a compound of eight ingredients that makes the elemental plant foods "do things they normally do not do")
 Claims: Increased nutrient efficiency and availability; higher yields; increased quality; shock resistor

Remarks: Works on all plants; total of 1 gal/A recommended for corn
 Known Research: Kelling et al. (1988d)

Water Crystals

Company: Water Crystals Inc., 2929 N. Prospect, Suite 104, Colorado Springs, CO 80907
 Ingredients: A cross-linked polymer
 Claims: Helps plants overcome drought
 Remarks: A super absorbent

Water-In

Company: Water In, Lodi, CA
 Ingredients: Alkyl polyethylene glycol ether
 Remarks: Surfactant
 Known Research: Feng et al. (2002)

Western WSCCO Soil Conditioner

Known Research: South Dakota (1964; 1964)

Wet-Sol 99 and Wet-Sol Gro

Company: Schaeffer Mfg. Co., 102 Barton St., St. Louis, MO 63104
 Ingredients: Wet-Sol 99 contains alkylphenyl-hydroxypolyoxyethylene; Wet-Sol Gro contains alkylphenyl-hydroxypolyoxyethylene, growth enzymes, bio-stimulants, B-complex vitamins and fermentation products
 Claims: Breaks down surface tension of water; increases water's penetrative ability; increases nutrient availability and yield
 Known Research: Murdock and Talley (1986); Khan et al. (2000a; 2001); Kelling and Lowery (2001); Thornton et al. (undated)

Wex

Company: Conklin Co., 4660 W. 77th St., Minneapolis, MN 55435
 Ingredients: Alcohol ethoxylates 21.68%; propylene glycol 8.87%; dimethylpolysiloxane 0.85%; inert 68.6%
 Claims: Makes water wetter, superior root development, faster crop development, increased yields, more root hair formation, greater exposure to available soil nutrients and moisture
 Remarks: Applied at 1-2 pt/A. Has "NRA" -- formerly "nutrient release agent" now "nutrient related action"
 Known Research: Crookston (1977); Vitosh and Hyde (1977); Crookston, Minn. (1978); Fenster et al. (1978); Sunderman (1978); Vitosh et al. (1978); Doersch (1979); Haby et al. (1980); Kelling et al. (1980); Laughlin et al. (1980); Lessman and McCutchen (1980); Hunt and Baker (1981); Lawless et al. (1981); Laughlin et al. (1982); Stone (1982); Penas (1983); Sunderman (1983); Wolkowski et al. (1983); Wolkowski et al. (1985a); Frank (undated); Murdock (undated); Robertson (undated)

Wil-GRO Formula 67

Company: Distributed by Trazco Inc., Box 1612, Garland, TX 75074
 Ingredients: Soluble whey extract, kelp, lactic acid with Cu, Fe, Zn, and Mn
 Claims: Soil more porous, better growth and yields; chelates metals
 Remarks: Use 1/2 to 1 pt/A; "A biodegradable ternary eutectic soil additive"

WilArd's WATER (See Catalyst Altered Water; Nature's Nutrient; LA Normalizer)

Company: C.A.W. Industries, Inc., 5001 Sturgis Rd., Rapid City, SD 57701
 Ingredients: Water, 99.12%; CAW Micelle (sodium meta silicate, sulfated castor oil, CaCl₂, MgSO₄), 0.88%; trace of soluble refined lignite
 Claims: Acts as a "normalizer" on living plants; need 1/3 the amount of fertilizer normally applied
 Remarks: Apply at 1/10 gal/A

Wonder Grow

Company: World-wide Wondergrow Inc., P.O. Box 372, Albuquerque, NM
 Ingredients: 46% soluble organic matter, 15.3% humic acid and smaller amounts of plant nutrients
 Claims: Acts as a soil conditioner and stimulates nutrient use and plant growth
 Remarks: Apply 600-1000 lb/A preplant or sidedress for corn; "The real magic of soil conditioners"

Wonder Life (Also produce feed additives)

Company: Wonder Life Enterprises Inc., Hwy. 21 W, P.O. Box 3746, Bryan, TX 77801
 Also Wonder Life Corp. of America, 5875 Fleur Drive, Des Moines, IA 50315
 Ingredients: Fortified humus (2-2-2) consisting of decomposed organic matter, aerobic bacteria, and trace minerals including S and Ca (1%), Mg (0.5%), Fe (0.1%), Cu, Mn and Zn (0.05%), and B (0.02%)
 Claims: Reduced energy inputs, superior quality foods and feeds, improved soil fertility, increased profit
 Remarks: Apply 150 lb/A in row or 250 lb/A broadcast. Use instead of pesticides and fertilizers
 Known Research: Overdahl and Ankeny, cited in Overdahl (1975); Holcomb et al. (1976); Penas (1983)

World Wide Humates

Company: World Wide Farm Markets, Minot, ND 58701
 Ingredients: Organic matter 63.8%; 4.6% K; 2.73% S; 2% Ca; 3.8% Si; 0.6% P; 1.65% N and 13 others listed
 Claims: Activates and aerates the soil, aids in percolation
 Remarks: Natural nitrogen in humates is 12-17% more potent than synthetic N

WRG-1000 Ag Adjuvant

Company: Westbridge Research Group, 8950 Villa La Jolla Drive, Suite 2130, La Jolla, CA 92037
 Ingredients: Blend of salts of carboxylated water soluble organic anionic polyelectrolytes
 Claims: Reduces soil compaction; improves permeability and water movement; improves root formation; improves soil structure; reduces erosion; increases water retention

WUXAL Suspensions (Tuber and Calcium)

Company: Aglukon Agri-Products, 50 N. Harrison Ave., Congers, NY 10920
 Ingredients: 10% N and mixture of chelated micronutrients; calcium also contains 10.7% Ca
 Remarks: Use at 1-5 pt/A in multiple applications

Wy-Mite

Company: Processed by W.J. Richards, Thermopolis, WY 82443
 Ingredients: Ca as CaCO₃ 97.3%; Mg as MgCO₃ 1%, S as CaSO₄ 0.5% and 21 other elements listed
 Claims: Reclaims some unproductive soil, replaces needed soil minerals

Wyomite

Company: NVAM, Inc., 101 W. 6th St., Topeka, KS 66603
 Ingredients: Ca 20%, Mg 2.5%, S 10.5%, Fe 0.8%, Na 0.16%, Zn 0.6%
 Claims: Sulfur and calcium source
 Remarks: Deposit and plant operation in Thermopolis, Wyoming. Mined from deposits caused by evaporation from mineral hot springs

X-Cyte

Company: Stoller Enterprises Inc., 8580 Katy Freeway, Suite 200, Houston, TX 77024
 Ingredients: 0.04% cytokinin (as kinetin)
 Claims: Reduces plant stress
 Remarks: Apply 1 pt/A

YEA!

Company: Natural Ag, Div. of Bentech Laboratories, Inc., 14424 S.E. Industrial Way, Clackamas, OR 97015-9696
 Ingredients: Poly-D-glucosamine, a naturally occurring polymer derived from shells of crustaceans
 Claims: Increased yields, fuller crown and stronger stem, enhanced root system, help control soil erosion problems
 Remarks: Originally registered for wheat; may have expanded to other crops; to be applied as a seed treatment at 16 oz/100 lb seed
 Known Research: Spidle (1987a); Grabe et al. (1988); Reeves and Bonnemann (1988)

Yeald (See ACA)

Remarks: Apparently name for ACA when marketed in United Kingdom

Z93 (Alternative identification of GroZyme)

Known Research: Arriaga and Lowery (2000)

Zeolite

Company: Fugi Zeolite LTD, Natori Blvd., 2F Siginami-ku, Tokyo, JAPAN
 Ingredients: May be the mineral zeolite. Analysis according to flyer SiO₂ 63.25%, Al₂O₃ 14.61%, CaO 3.95%, MgO 0.54%, FeO 1%, K₂O 2%, NaO 3.17%
 Claims: Neutralizes acid soils, inspires microorganisms, absorbs gas and water molecules, increases fertilizer efficiency 2 to 3 times, increases stress resistance

Zinc Ten

Company: Custom Chemicides, P.O. Box 11216, Fresno, CA 93772
Ingredients: 10% Zn as zinc sulfate, organic complexing agents
Remarks: Apply 1 qt/A

Zintrac 700

Company: Phosyn Plc., The Industrial Estate, Pocklington, York, YO4 2NR, United Kingdom
Ingredients: 700 g/L zinc
Remarks: Much lower rate needed (14-28 oz/A)

Zonix

Company: Jeneil Biosurfactant Co., 400 N. Dekora Woods Blvd., Saukville, WI 53080
Ingredients: Rhamnolipid biosurfactant
Claims: Functions as a biofungicide against zoosporic plant pathogens
Remarks: Apply at concentration of 85-125 ppm diluted with water at early stages of plant growth and every 5 days thereafter

ZTZ

Company: Terra Research
Ingredients: Fermentation product of cow manure and urine controlled by algae and bacteria cultures
Claims: Inoculates soil with beneficial bacteria and algae, activates soil, increases water penetration, increases porosity, better germination and growth, reduces damping off
Remarks: Green, odorless solution applied at 30 gal/A

ZyDox

Company: Enviro Consultant Services, Evergreen, CO
Ingredients: Chlorine dioxide (50-500 ppm)
Claims: Biocide against crop diseases
Known Research: Lee and Todd (undated)

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