ProGrow®
Let's learn from nature!

SOIL & PLANT AMENDMENT

to promote vigor for healthier plants

Measure success...

... and the difference!

Let's learn and benefit from Nature

Progress Agrar is a German based agricultural company providing seeds and service worldwide.

Progress Agrar is offering the Pro**Grow**® series of products to protect and enhance your crops

- **Vegetable Crops**
- **Field Crops**
- **Fruit and Nut Trees**
- **Herb & Ornamental Crops**
- **Aqua Agriculture / Hydroponics**

By using the Pro**Grow**® products you can maximize the potential starting with the seeds and throughout the life of the plant and is (supporting well) completing mother nature.

All Pro**Grow**® products are natural and developed to work in harmony with your crop. The result is a crop with improved health and tolerance to stress ensuring the best yield possible season after season und a wide range of weather and growing conditions.

A good future needs INOVATION – the key to success and see how Pro**Grow**® makes the difference!

100 % organic integrated solution from mother nature to secure your agricultural success!

Manufacturing practices

Pro**Grow**® Microbials produces beneficial microorganisms in its state of the art manufacturing facility. We culture and stabilize fungi, Gram (+) and Gram (-) bacteria strains. We grow each strain independently, and then blend the strains in specific proportions to guarantee consistent products. Our technology guarantees pharmaceutical-grade microbial products without any contaminants. The shelf life of our liquid and dry products is guaranteed for two years without the need of refrigeration.

95 % of plant form association with Mycorrhizae!

User Recommendation
Avoid the use of bactericides, such as copper one week before and one week after application of Pro**Grow**®!

TABLE OF CONTENT

The start is essential for healthy plants and higher yield success!

Endo-Mycorrhizae ProGrow® My-15

POWDER

Endo-Mycorrhizae My-15 for coating any kind of seed and plant dressing is leading to a healthy and strong root system.

ProGrow® **My-15** is composed of arbuscular mycorrhizal fungi that grow inside and outside of the root system of the plant, resulting in improved growth, vigor and productivity of plants. ProGrow® **My-15** also improves the ability of the plant to obtain water and nutrients from the soil, by increasing up to 1000 times the area of soil where the plant gathers its nutrients. Furthermore, this product has the ability to extract nutrients that are not chemically available to the plant.

ProGrow® **My-15** needs to be applied in all cases as close as possible to the root system of plants:

- Seed treatment with ProGrow® **My-15**
- Roots can be dipped in a solution made up with ProGrow® **My-15**
- ProGrow® **My-15** should be injected very close to the root

COMPOSITION

Mycorrhizal fungi (native strains do not contain genetically modified organisms (GMO's)
Rhizophagus irregularis (Blaszk.,Wubet, Renker, Buscot) C. Walker & A. Schüßler comb.nov.

Raw materials	
Carrier material	*Vermiculite 20*
Living microorganisms	*Arbuscular mycorrhiza*

Total phosphate (P205) 0.32 %, Total potassium oxide (K20) 0.11 %, Total sulfur (S) 0.27 %, Total magnesium (Mg) 0.26 %

Mycorrhiza units/cm³ substrate	*8,000*
Mycorrhiza effectiveness	
(increased growth [%] in standardized test)	*48 ± 5*
Specific weight [g/l]	*700*
Compatibility with fungicides	Has been tested

BENEFITS

Improves:

- Uniformity in plant development
- Early formation of flowers and fruits
- Increase in yield and quality of flowers and fruits
- Reduction in the requirements for water, fertilizers and pesticides
- Improvement in soil quality

Reduces:

- Reduction of stress caused by transplant and planting, drought, extreme temperatures, heavy metals, pesticides and deleterious microbes

Endo-Mycorrhizae - © Mercy, INOQ

APPLICATION/RECOMENDATIONS

Seed treatment - Vegetable seeds	1 ml/ 0.7g for 2,000 grains approx. Note: Calculate the exact application rate depending on the number of grains and the value of the production in greenhouse or in open field.
Seed treatment - Field crops	1 ml/ 0.7g for 8.000 grains approx. Note: Calculate the exact application rate depending on the number of grains and the value of the production in greenhouse or in open field.
Mixing with substrate	0.1 to 0.3 % (recommended)
Bringing into the plant hole	0.5 ml / plant (to 15 cm ∅ rootball) to 3 ml / plant (to 40 cm ∅ rootball)
Existing plantations	Depending on the size, introduce up to 3 ml / 2 g per plant into bore holes
Health and safety information	No special precaution necessary Avoid breathing or ingestion Absence of phytopathogens proven (DNA multiscan®) Material Safety Data Sheet available

PLANTS AND TREES THAT FORM ASSOCIATION WITH ProGrow® MY-15

Fruit and nuts
Blackberry, cherry, citrus, currant, fig, grapes (table and wine), guava, mango, papaya, peach, peanut, pineapple, pistachio, plum, raspberry, strawberry, walnut.
Vegetables and other crops
Artichoke, asparagus, barley, beans, carrot, celery, corn, cucumber, garlic, grass, lentil, lettuce, millet, onion, pepper, potato, pumpkin, rice, sweet potato, soy, tomato, turf, wheat, yam, yucca.
Flowers and ornamental
Bamboo, begonia, bulbs, cactus, camellia, chrysanthemum, fern, gardenia, geranium, magnolia, marigold, mouths of dragon, palm, poinsettia, rose, sunflower. etc.
Others
Acacia, birch, cocoa, coconut palm, coffee, cotton, cypress, eucalyptus, ginger, maple, olive, palm of oil, pecan, sugar cane, tobacco, tea.

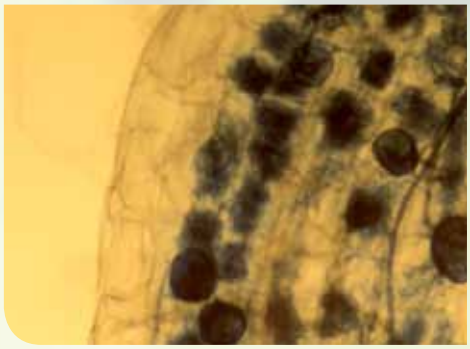
Some plants do not form association with ProGrow® My-15, such as azalea, carnation, rhododendron, orchids and beets.

STORAGE

- Store in cool, dry place
- Avoid high temperatures and direct sunlight
- Product shelf life is up to 24 months

PACKAGE SIZES

- 50 g & 100 g and depending on requirements



Endo-Mycorrhizae - © Mercy, INOQ

Endo-Mycorrhizae ProGrow® My-28

POWDER

Endo-Mycorrhizae My-28 for coating any kind of seed and is leading to a healthy and strong root system.

Endo-Mycorrhizae Pro**Grow**® **My-28 is a newly developed product in a more concentrated form and of four Glomus strains.**
Pro**Grow**® **My-28** are fungi's that grow in and out of the roots of plants resulting in improved growth, vigor and productivity of plants.
Pro**Grow**® **My-28** increases the ability of the plant to get water and nutrients from the soil, by increasing up to 1000 times the area of soil where the plant gathers its nutrients. Furthermore, Pro**Grow**® My-28 has the ability to extract nutrients that are not chemically available to the plant.
Pro**Grow**® **My-28** has been formulated for seed treatment at a very high propagule count and with very fine carriers for smooth layer coverage.

- Seed treatment with Pro**Grow**® **My-28**
- The roots of plants can be dipped in a solution made up with Pro**Grow**® **My-28** before transplant.

COMPOSITION

Mycorrhizal fungi strain (native strains do not contain genetically modified organisms (GMO's):

1. *Glomus mosseae: Funneliformis mosseae* (T.H. Nicolson & Gerd.) C. Walker & A. Schüßler comb. nov.

2. *Glomus aggregatum: Glomus aggregatum* N.C. Schenck & G.S. Sm.

3. *Glomus etunicatum: Claroideoglomus etunicatum* (W.N. Becker & Gerd.) C. Walker & A. Schüßler comb. nov.

4. *Glomus intraradices: Rhizophagus irregularis* (Błaszk., Wubet, Renker & Buscot) C. Walker & A. Schüßler

Raw materials	
Carrier material	*Fine sugar*
Living microorganisms	*Arbuscular mycorrhiza*
MYCORRHIZAE units/cm³ substrate	*22,000 per gram*
MYCORRHIZAE effectiveness (increased growth [%] in standardized test)	*48 ± 5*
Specific weight [g/l]	*1.000*
Compatibility with fungicides	Has been tested

APPLICATION/RECOMENDATIONS

Seed treatment - Vegetable seeds	0,8 – 5 g per ha **Note:** Calculate the exact application rate depending on the number of grains and the value of the production in greenhouse or in open field.
Seed treatment - Field crops	5 g per ha **Note:** Calculate the exact application rate depending on the number of grains and the value of the production.
Health and safety information	No special precaution necessary Avoid breathing or ingestion Material Safety Data Sheet available

Plant without Mycorrhizae

Plant with Mycorrhizae

STORAGE

- Further product details are see same than described for Pro**Grow**® My-15.

PACKAGE SIZES

- 50 g & 100 g and depending on requirements

Earlier harvest & more crispy

Microbial Blend ProGrow® 380

POWDER

Microbial Blend for Seed Treatment

Stronger, healthier roots

ProGrow® 380 contains the following microbes: Phosphate Solubilizing & Phosphate Mineralizing Bacteria
(Bacillus subtilis, B. amyloliquefaciens, B. pasteurii, B. firmus, B. megaterium, P. polymyxa)
Mineral phosphates (inorganic) are solubilized via organic acids (secondary metabolites) produced by bacteria. Organic acids include gluconic acid, 2-ketogluconic acid, lactic acid, isovaleric acid & acetic acid. Organic phosphates are mineralized via phosphatase enzymes (secondary metabolites) produced by bacteria. Enzymes include phytase, acid phosphatase, D-glycerophosphatase. Solubilized mineral phosphates are rapidly & efficiently sequestered by endomycorrhizal fungi (synergy). Facilitates root growth, root development, rapid root strike and overall plant establishment. Enhances germination process.

Rhizo-Bacteria which stimulate healthy plants
(Bacillus subtilis, B. amyloliquefaciens, B. pumilus, B. pasteurii)
Plant health is induced by exposure of plant roots to specific Plant Growth Promoting Rhizo Bacteria (PGPRB). Process dependent on signaling via phytohormones, jasmonic acid and ethylene, resulting in production of phenolic compounds.
The results increase resistance to environmental stress (heat, drought, cold, disease).

Plant Growth Promoting Rhizo-Bacteria (PGPRB)
(Bacillus subtilis, B. amyloliquefaciens, B. firmus, B. licheniformis, B. pumilus, Paenibacillus polymyxa)
Gibberellin Production = B. pumilus, B. licheniformis
Auxin (Indole Acetic Acid) = B. subtilis, B. amyloliquefaciens, B. firmus Cytokinins = P. polymyxa, B. subtilis.
Auxins control root architecture, vascular tissue differentiation, lateral root initiation, polar root hair positioning & root gravitropism. Gibberellines control cell elongation, cell division, cell differentiation & stress reduction. Cytokinins control cell division (cytokinesis) in roots & shoot, increased resistance to drought, chlorophyll synthesis. PGPRB promote plant growth independent of supplemental fertilizer applications.

Free Living Nitrogen Fixing Bacteria
(Paenibacillus durum, P. polymyxa, Azotobacter chroococcum, A. vinelandii)
Convert atmospheric di-nitrogen (N2) into plant available ammonia (NH3). Process is mediated by nitrogenase enzyme (secondary metabolite). Paenibacillus are mesophilic, facultative anaerobes, function in both aerobic & anaerobic soil environments. Paenibacillus form tough endospore covering to protect them against harsh environmental conditions. Azotobacter are aerobic organisms which thrive in neutral and alkaline soil environments. Azotobacter form protective cysts which mitigate the negative effects of dry soil conditions & UV light

Bacteria, Actinobacteria & Fungi Antagonistic To Pathogenic Organisms
(Streptomyces lydicus, S. griseus, Trichoderma harzianum, T. viride, T. virens, Pseudomonas fluorescens, Bacillus subtilis, B. pumilus, B. licheniformis)
Release a variety of secondary metabolites which are antagonistic to pathogenic fungi & viruses. Produce antibiotics which inhibit vital cellular functions of pathogens (Protein synthesis, DNA replication, etc). Produce chitinase (breaks down chitin based cell wall of pathogenic fungi). Produce a variety of cell wall degrading enzymes & ethyl acetate to control pathogenic fungi. Control pathogen through inactivation of virulence traits

Microbial Bio-stimulants and Carriers
56% Dextrose, 40% Amino Acids (L-Alanine, L-Arginine, L-Aspartic Acid, L-Cystine, L-Glutamic Acid, L-Glycine, L-Histidine, L-Isoleucine, L-Lysine, L-Methionine, L-Phenylalanine, L-Proline, L-Threonine, L-Serine, L-Tryptophan, L-Tyrosine, L-Valine), 2% Brewer's Yeast Extract (B, C, K Vitamin Source), 1% Di-potassium Phosphate.

BENEFITS

Improves:

- Root mass
- Flowering and color
- Transplant survival
- Nutrient availability
- Absorpotion
- Cell division
- Lateral bud development
- Plant performance under stress
- Respiration and photosynthesis

Reduces:

- Loss of Plants

ProGrow® 380 Powder

APPLICATION AS SEED TREATMENT

Please follow our seed & plant treatment application guide. Available on request!

INGREDIENTS	STORAGE	PACKAGE SIZES
• TOTAL COUNTS RHIZOSPHERE MICROBES: $3.74x10^9$ CFU/GR	• Store in cool, dry place • Avoid high temperatures and direct sunlight • Product shelf life is up to 24 months	• 100 g, 500 g & 1.000 g

Microbial Blend ProGrow® 385

POWDER

Microbial Blend for Foliage & Soil Treatment

Strong and healthy root systems

ProGrow® 385 contains the following microbes:
Phosphate Solubilizing & Phosphate Mineralizing Bacteria
(Bacillus subtilis, B. amyloliquefaciens, B. pasteurii, B. firmus, B. megaterium, P. polymyxa)
Mineral phosphates (inorganic) are solubilized via organic acids (secondary metabolites) produced by bacteria. Organic acids include gluconic acid, 2-ketogluconic acid, lactic acid, isovaleric acid & acetic acid. Organic phosphates are mineralized via phosphatase enzymes (secondary metabolites) produced by bacteria. Enzymes include phytase, acid phosphatase, D-glycerophosphatase. Solubilized mineral phosphates are rapidly & efficiently sequestered by endomycorrhizal fungi (synergy). Facilitates root growth, root development, rapid root strike and overall plant establishment. Enhances germination process.

Rhizo-Bacteria, which stimulate healthy plants
(Bacillus subtilis, B. amyloliquefaciens, B. pumilus, B. pasteurii)
Plant health is induced by exposure of plant roots to specific Plant Growth Promoting Rhizo Bacteria (PGPRB). Progess dependent on signaling via phytohormones, jasmonic acid and ethylene, results in production of phenolic compounds.
Results increase resistance to environmental stress (heat, drought, cold, disease).

Plant Growth Promoting Rhizo-Bacteria (PGPRB)
(Bacillus subtilis, B. amyloliquefaciens, B. firmus, B. licheniformis, B. pumilus, Paenibacillus polymyxa)
Gibberellin Production = B. pumilus, B. licheniformis
Auxin (Indole Acetic Acid) = B. subtilis, B. amyloliquefaciens, B. firmus Cytokinins = P. polymyxa, B. subtilis.
Auxins control root architecture, vascular tissue differentiation, lateral root initiation, polar root hair positioning & root gravitropism. Gibberellines control cell elongation, cell division, cell differentiation & stress reduction. Cytokinins control cell division (cytokinesis) in roots & shoots, increased resistance to drought, chlorophyll synthesis. PGPRB promote plant growth independent of supplemental fertilizer applications.

Free Living Nitrogen Fixing Bacteria
(Paenibacillus durum, P. polymyxa, Azotobacter chroococcum, A. vinelandii)
Convert atmospheric di-nitrogen (N2) into plant available ammonia (NH3). Process is mediated by nitrogenase enzyme (secondary metabolite). Paenibacillus are mesophilic, facultative anaerobes, function in both aerobic & anaerobic soil environments. Paenibacillus form tough endospore covering to protect them against harsh environmental conditions. Azotobacter are aerobic organisms which thrive in neutral and alkaline soil environments. Azotobacter form protective cysts which mitigate the negative effects of dry soil conditions & UV light

Bacteria, Actinobacteria & Fungi Antagonistic To Pathogenic Organisms
(Streptomyces lydicus, S. griseus, Trichoderma harzianum, T. viride, T. virens, Pseudomonas fluorescens, Bacillus subtilis, B. pumilus, B. licheniformis)
Release a variety of secondary metabolites which are antagonistic to pathogenic fungi & viruses. Produce antibiotics which inhibit vital cellular functions of pathogens (Protein synthesis, DNA replication, etc). Produce chitinase (breaks down chitin based cell wall of pathogenic fungi). Produce a variety of cell wall degrading enzymes & ethyl acetate to control pathogenic fungi. Control pathogen through inactivation of virulence traits

Microbial bio-stimulants and carriers
57% Dextrose, 20% Sucrose, 3% Amino Acids (L-Alanine, L-Arginine, L-Aspartic Acid, L-Cystine, L-Glutamic Acid, L-Glycine, L-Histidine, L-Isoleucine, L-Leucine, L-Lysine, L-Methionine, L-Phenylalanine, L-Proline, L-Threonine, L-Serine, L-Tryptophan, L-Tyrosine, L-Valine), 1% Brewer's Yeast Extract (B, C, K Vitamin Source), 1% Di-potassium Phosphate, 1% Kelp Extract (Ascophyllum nodosum), 1% Yucca schidigera

BENEFITS

Improves:

- Root mass
- Flowering and color
- Transplant survival
- Nutrient availability
- Absorpotion
- Cell division
- Lateral bud development
- Plant performance under stress
- Respiration and photosynthesis

Reduces:

- Loss of Plants

ProGrow® 385 Powder

APPLICATION AS FOLIAGE & SOIL TREATMENT

Greenhouse

Premix 170 g of Pro**Grow**® 385 into 30 liters of water and agitate well. Take the pre-mixed mixture and place in the injection system. Set the injector system at 1:100 dilutions and apply to foliage and soil. Apply the 3000 liters of finished product to 1000 square meters of plant material (final concentration of ProGrow® 385 = 60 grams per cubic meter).

1. Application: Drench plug tray just prior to transplanting into a premix made at a dose rate of 60 grams of ProGrow® 385 per cubic meter.
2. Application: Apply pre-mix solution at 60 grams per cubic meter to foliage and soil two weeks after transplanting.
3. Application: Apply to foliage and soil four weeks after second application. If growth cycle extends beyond 6 weeks, apply monthly at the same dose rate.

Growing Media Amendment

Incorporate 80 to 160 grams of ProGow® 385 per cubic meter of growing media.

Ornamentals, Row Crop

Apply Pro**Grow**® 385 to soil and foliage at a rate of 0.4 to 0.8 kg per hectare every 4 to 6 weeks. Alternatively, apply product at emergence, pre-florescence and pre-fruit formation at a rate of 0.4 to 1 kg per hectare.

Grain Crop

Apply ProGrow® 385 to soil and foliage at a rate of 0.5 kg per hectare at emergence and pre-florescence.

Golf Courses & Lawn

Dissolve ProGrow® 385 in water and apply at a rate of 15 grams per 100 square meters of greens or trees and 7 grams per 100 square meters of fairways.
Apply the product monthly. If bacterial or fungal disease are evident increase the dose rate to 30 grams per 100 square meters and apply the product every two weeks.

INGREDIENTS	STORAGE	PACKAGE SIZES
• TOTAL COUNTS RHIZOSPHERE MICROBES: 3.78 x10^9 CFU/GR.	• Store in cool, dry place • Avoid high temperatures and direct sunlight • Product shelf life is up to 12 months	• 250 g, 500 g & 1.000 g

Endo-Mycorrhizae/Microbes ProGrow® 570

POWDER

Endo-Mycorrhizae/Microbial Blend for Root- Seeds / PlantTreatment

Strong and healthy root systems

ProGrow® 570 contains fungi that grow in and out of the roots of plants resulting in improved growth, vigor and productivity of plants.
ProGrow® 570 increases the ability of the plant to get water and nutrients from the soil, by increasing up to 1000 times the area of soil where the plant gathers its nutrients. Furthermore, ProGrow® 570 has the ability to extract nutrients that are not chemically available to the plant. ProGrow® 570 needs to be applied in direct contact with the roots of plants.

- The roots of plants can be dipped in a solution made up with ProGrow® 570 before transplant.
- ProGrow® 570 can be injected / with drip irrigation into the soil, close to the roots of established plants.

Plants need to be treated only once with ProGrow® 570 throughout their growth cycle. For optimal results turf can be treated twice a year with ProGrow® 570. Dosage rates are presented in the application guide section.

COMPOSITION

ProGrow® 570 is a balanced mixture of four selected strains of *endo-mycorrhizae*, eight strains of *Bacillus*, two strains of *Paenibacillus*, a *Streptomonas*, three strains of *Trichoderma*, two strains of *Streptomyces* and two strains of *Azotobacter* for a total count of rizosphere microbes superior to 2.45×10^8 CFU per gram.
The strains of mycorrhizae have been carefully selected and multiplied "in vivo" in a greenhouse under strict monitoring conditions. All bacteria and free living fungi originate from the American Type Culture Collection and have been determined to be non-pathogenic to plants or animals. The microbes are maintained cryopreserved at - 80 degrees Celsius. The strains are multiplied individually under liquid conditions in aseptic systems that guarantee no contamination. The produced microbes are spray dried under aseptic conditions. The dry strains go through a strict quality control process where presence of contaminants, viable counts and activity are determined. Finally the strains are blended into the formulation to guarantee the composition of each batch.
ProGrow® 570 also contains non-plant food ingredients: Kelp (*Ascophyllum nodosum*), humic acids derived from leonardite and diatoms (inert).

BENEFITS

Improves:

- Uniformity in plant development
- Early formation of flowers and fruits
- Increase in yield and quality of flowers and fruits
- Reduction in the requirements for water, fertilizers and pesticides
- Improvement in soil quality

Reduces:

- Reduction of stress caused by transplant and planting, drought, extreme temperatures, heavy metals, pesticides and deleterious microbes

Mycorrhizae and Microbes are working perfectly under almost any climate environment.

ProGrow®
Let's learn from nature!

APPLICATION/RECOMENDATIONS

Nurseries
Add 300 to 500 grams of ProGrow® 570 per cubic meter of potting soil.
All kinds of transplants
Dip roots of plants at a rate of 0.05 to 0.2 grams per plant. Immerse roots for 20 minutes in a Pro-Grow® 570 solution and plant immediately. Treating the plants in the early stages of root development (3 mm to 1.2 cm root length), or halfway the cycle of cultivation in the nursery maximize colonization and protection.
Established plants, bushes and trees
Apply 1 to 2 grams of ProGrow® 570 per plant, 3 to 4 grams per bush, and 4 to 10 grams per tree. If the soil is porous a solution made with ProGrow® 570 can be poured at the base of the plant. For deeper roots we recommend to inject the ProGrow® 570 solution.

INGREDIENTS

ProGrow®570 is a balanced mixture of four selected strains of Endo-Mycorrhizae:
1. Glomus mosseae: Funneliformis mosseae (T.H. Nicolson & Gerd.) C. Walker & A. Schüßler comb. nov. 2. Glomus aggregatum: Glomus aggregatum N.C. Schenck & G.S. Sm. 3. Glomus etunicatum: Claroideoglomus etunicatum (W.N. Becker & Gerd.) C. Walker & A. Schüßler comb. nov. 4. Glomus intraradices: oft Rhizophagus irregularis (Błaszk., Wubet, Renker & Buscot) C. Walker & A. Schüßler comb. nov. in a concentration of 5 spores of each species per g. ProGro® 570 is enriched with beneficial bacteria and fungi: Bacillus firmus, Bacillus amyloliquefaciens, Bacillus subtilis, Bacillus licheniformis, Bacillus megaterium, Bacillus pumilus, Bacillus pasteurii, Bacillus coagulans, Paenibacillus polymyxa and Paenibacillus durum at 2.1 x 107 CFU of each strain per gram, Pseudomonas fluorescens at 3.9 x 106 CFU per gram, Trichoderma harzianum, Trichoderma viride, Trichoderma virens, Streptomyces lydicus, Streptomyces griseus, Azotobacter chroococcum, and Azotobacter vinelandii at 1.5 x 106 CFU of each strain per gram.

PLANTS THAT FORM ASSOCIATION WITH PROGROW® 570

Fruit & Nuts *Almond, Apple, Apricot, Avocado, Banana, Blackberry, Cherry, Citrus, Currant, Guava. Grapes (table and wine), Fig, Mango, Papaya, Peach, Peanut, Pineapple, Pistachio, Plum, Raspberry, Strawberry, Walnut.*
Grain Crops and Vegetables *Asparagus, Artichoke, Barley, Beans, Carrot, Celery, Corn, Cucumber, Garlic, Grass, Lettuce, Lentil, Millet, Onion, Potato, Pumpkin, Pepper, Tomato, Rice, Soy, Sweet potato, Turf, Wheat, Yam, Yucca.*
Flowers and Ornamental *Bamboo, Begonia, Mouths of dragon, Bulbs, Camellia, Cactus, Marigold, Chrysanthemum, Gardenia, Geranium, Sunflower, Fern, Magnolia, Palm, Poinsettia, Rose.*
Others *Acacia, Birch, Cocoa, Coconut Palm, Coffee, Cotton, Cypress, Eucalyptus, Ginger, Maple, Olive, Pecan, Palm of oil, Oak, Sugar Cane, Tobacco, Tea.*
Some plants do not form association with ProGrow® 570 *such as azalea, carnation, rhododendron, orchids and beets.*

FUNGICIDES	Compatible	Noncompatible	Compatible
	Azoxystrobin (Heritage)	Benodamil (Bayleton)	Abamectin (Avid)
	Chlorothalonil (Bravo, Daconil 2787, Daconil Ultrex, Daconil Weather Stik, Exothem)	Captan (Captan, Orthocide)	Acephate (Orthene)
	Fenarimol (Rubigan)	Copper Oxychloride Sulfate	Azaterractin (Margoson)
	Fosethyl-Al (Alliette, Prodigy)	Chloroneb (Terraneb SP, Terremec SP)	Bendiocarb (Dycarb, Trumpet)
	Iprodione (Chipco 26019)	Folpet (Phaltan)	Bifenthrin (Attain, Talstar)
	Thiophanate-methyl (Clearly's 3336, Fungo, Systec 1998)	Formalin (Formaldehyde)	Bromo (Agribrom)
	Thiram (Thiram, Tersan 75)	Quintozene (PCNB Terrachlor, Turfcide)	Carbaryl (Sevin)
		Metalaxyl (Subdue, Ridomil, Apron)	Chinomethionat (Morestan)
		Propiconazole (Banner MAXX)	Chlopyrifos (Dursban)
		Thiazole (Benomyl, Benlate, Tersan 1991)	Cyromazine (Citation)
		Tilt (CGA65250)	Dicofol (Kelthane)
			Dienochlor (Pentac)
			Dimethoate (Cygon)
			Fenbutatin (Vendex)

STORAGE

- Store in cool, dry place
- Avoid high temperatures and direct sunlight
- Product shelf life is up to 12 months

PACKAGE SIZES

- 100 g, 500 g & 1.000 g

Seedless Grapes are responding very well

Microbial Blend ProGrow® 620

LIQUID

Microbial Blend for Foliage & Soil Treatment

Strong and healthy root systems

ProGrow® 620 is a liquid bacteria formula that increases growth and production of plants in spite of the presence of a wide array of bacterial and fungal plant pathogens.
Fungal plant pathogens are always present in natural environments; however, these organisms do not grow out of control and decimate the plants. The ecological balance of the natural environment takes care of controlling the proliferation of the plant pathogens. Unfortunately, under intensive monoculture production systems, the use of chemically unbalanced fertilizers and pesticides reduces the microbial diversity and, consequently, allows plant pathogens to proliferate. The microbes in ProGrow® 620 cause a shift in the microbial ecology of the environment by diverse mechanisms allowing growth and production of diverse crops at their full genetic potential, even in the presence of fungal plant pathogens.
ProGrow® 620 can be applied to the soil with any type of irrigation systems, and to the foliage with any device used for this type of application. Rotation of soil and foliage applications bring ecological stability of soil and foliage.

Microbial bio-stimulants and carriers

ProGrow® 620 is a balanced blend of selected strains of Bacillus and has been patented in the USA.

Unique product

The strains in ProGrow® 620 are naturally occurring, and they have not been genetically modified. The strains are grown individually under a proprietary technology that guarantees no contamination. The spores are blended in balanced proportions and are stabilized with organic polymers resulting in a shelf life of 18 months with no need of refrigeration. We guarantee a minimum spore concentration of $5x10^{11}$ spores per liter.

Plants can be grown at their full genetic potential when cultured with ProGrow® 620 in spite of the presence of the following plant pathogens:

Phytophthora cactorum (ATCC 5800)
Phytophthora capsici
Phytophthora cinnamomi
Phytophthora citricola
Phytophthora citrophthora
Phytophthora nicotianae
Phytophthora parasítica
Botrytis cinerea
Botrytis sp.
Colletotrichum gloeosporioides
Fusarium oxysporum (ATCC 11711)
Monilia sp.
Pythium ultimum (ATCC 56081)
Rhizoctonia solani (ATCC 38922)
Verticillum sp.
Sclerotinia sclerotiorum

BENEFITS

Improves:

- Produces a wide array of natural antibiotics
- Produces enzymes (such as chitinazes)
- Produces bioactive metabolites that modify the microbial species composition that colonize the soil and foliage, inducing the establishment of a beneficial biological community for the plant
- Absorbs essential nutrients more efficiently than deleterious microbes, thus eliminating them by competition
- Produces vitamins and essential co-factors that stimulate plant defenses and growth.

Reduces:

- Reduction of stress caused by transplant and planting, drought, extreme temperatures, heavy metals, pesticides and deleterious microbes

Healthy onion stores also longer …

APPLICATION AS FOLIAGE & SOIL TREATMENT

Apply Pro**Grow**® **620** in a scheduled program starting before planting or at planting, and then re-apply periodically. Pro**Grow**® **620** acts as a preventive agent. Once plants are infected by systemic fungal diseases it is very difficult to save them.

Pro**Grow**® **620** is a liquid product that should be diluted in water and applied to the soil through any irrigation system, and to the foliage with any foliar application system. We recommend to applying Pro**Grow**® **620** along with the nutrients. This nutrient formulation stimulates spore germination, cell proliferation and production of bacterial metabolites required for effective activity of the strains present in Pro**Grow**® **620**.

Dose rates and application frequency depend on crop, soil type, environmental conditions, and incidence of pathogens.

Nurseries

- Soil preparation. Add 50 - 100 ml of Pro**Grow**® **620** diluted in water per cubic meter of soil. Add 12.5 to 25 grams of Pro**Grow**® **621** diluted in water per cubic meter of soil prior to planting.
- Seeds. Immerse the seeds in a solution prepared with 5 to 10 ml of Pro**Grow**® **620** in 1 liter of water prior to planting.
- Add weekly 25 – 50 ml of Pro**Grow**® **620** and 6.25 to 12.5 grams of Pro**Grow**® **621** per cubic meter.

Greeenhouses

- After planting apply by drench a 0.1 to 0.4 % solution of Pro**Grow**® **620** in water.
- Repeat applications at emergence, and weekly during periods of high disease incidence, or by-weekly in periods of low incidence.

Open Field

- Transplant: Immerse trays with plants before planting to soak the roots in a 0.5 % (v/v) solution of Pro**Grow**® **620** in water.
- Vegetable and fruit crops: During periods of high disease incidence we recommend weekly foliar or edaphic applications of Pro**Grow**® **620** at a dose rate of 400 ml to 1 liter per hectare. Apply simultaneously 250 grams of Pro**Grow**® **621** per liter of Pro**Grow**® **620**. If the period of disease incidence is known, we recommend to starting the applications two to four weeks before the event.
- Flowers: We recommend weekly foliar or edaphic applications of 10 to 20 ml of Pro**Grow**® **620** per bed (32 to 38 m^2) diluted in 10 liters of water. Add simultaneously 2.5 to 5 g of Pro**Grow**® **621**.

Hydroponics

- Weekly application in the stronger disease stage and monthly at less disease pressure.

RECOMMENDATIONS/PRECAUTIONS

- Purge irrigation systems and sprayers with copious amounts of water to eliminate any pesticide residue before applying Pro**Grow**® **620**.
- Avoid applying pesticides one week before and one week after the application of Pro**Grow**® **620**.
- Avoid use bactericides such as copper.
- Apply the product early in the morning or at the end of the afternoon.

Precautions

- Do not drink the product. If ingested, drink plenty of water.
- Use protective gloves and goggles.
- Avoid contact with eyes and open wounds.
- In case of skin contact please wash your hands immediately with water and soap.
- In case of spill dilute with water and discard through sewer or over soil.
- Keep bottle capped tightly with the lid.
- Store the product in the shade, at temperatures below 35°C.
- Product shelf life is up to 12 months.

PACKAGE SIZES

- 100 g, 250 g & 500 g

Microbial Blend ProGrow® 621

POWDER

MICROBIAL Blend FOR Germination and Multiplication of beneficial microbes. Strong and healthy root systems

ProGrow® 621 contains the following microbes:

ProGrow® 621 is a balanced dry formula of microbial nutrients, 100% organic to be used in field applications of ProGrow® 620 to stimulate:

- Germination and multiplication of beneficial microbes
- Biochemical activity of beneficial microbes

Beneficial bacteria like any other organisms have to be well fed to multiply and produce the biochemical molecules that cause the beneficial effects in the ecosystem. ProGrow® 621 is a balanced and 100% organic diet specifically developed for the bacteria strains that are unique to ProGrow® 620; however, they have also beneficial effects for strains that are already present in the soil.

COMPOSITION

Parameter	Percentage
Moisture	1.13
Crude Protein (CP)	28.84
Crude Fat	0.1
Crude Fiber	< 0.1
Ash	10.34
Nitrogen Free Extract (NFE)*	59.59
Carbohydrates*	59.59
Total Dissolved Nitrogen (TDN)*	88.53
Nitrogen (Total)**	4.61
Phosphorus (P)	0.27
Phosphorus Pentoxide (P_2O_2)	0.62
Potassium (K)	1.33
Potassium Oxide (K_2O)	1.60
Calcium (Ca)	0.25

* Calculated from the above proximate analyses.
** Total Nitrogen analyzed by the LECO Combustion Analyzer

ProGrow® 621 provides better growth of soil Bacillus strains than the laboratory media Tryptic Soy Broth used at full strength (30 grams/L).

APPLICATION AS FOLIAGE & SOIL TREATMENT

Mix 100 grams of ProGrow® 621 in 4 liter of water. Add 400 ml of ProGrow® 620. Apply to the soil or foliage using appropriate devices. Please consult the technical sheet of ProGrow® 620 for application rates and frequencies.

ProGrow® 621 stimulates diverse groups of beneficial microbes living in the soil and foliage, and is an essential component in bio-augmentation and bio-degradation processes. To stimulate microbial activity of natural populations add ProGrow® 621 at a rate of 0.5 to 1 kg per hectare on weekly or biweekly basis.

ProGrow® 621 is a powder that is 100% soluble in water and will not clog irrigation systems.

Apply all product that has been prepared and do not store left over product.

PACKAGE SIZES

- 500 g & 1.000 g

Plant Strenghening Agent

ProGrow ® - ComCat ®

POWDER

ComCat® - Catalyst for plants ComCat® (Communication & Catalysation) is a bio-extract manufactured from special wild plants which works as a catalyst to activate the primary metabolic processes, photosyn- thesis and respiration. In agricultural crops **ComCat®** enables more consistent and intensive growth of plants. **ComCat®** also improves the plants own natural defense mechanisms against biotic and abiotic stress factors acting as a highly efficient biological fortifier. After long-term scientific research and ongoing experiments by agricultural institutions, both local and abroad natural secondary metabolites in **ComCat®** have been identified and proven to play an extraordinary role in plants.

The use of **ComCat®** by farmers on different crops over many seasons resulted in markedly higher yields as well as improved quality of products, emphasizing the product's sustainable economical contribution

Most important advantages of ComCat® Increases the economic outcome through:

- Improvement of plant health (activation of the plants own defence mechanisms)
- Stimulation of root growth (increases the uptake of water and nutrients)
- Inducing flower bud formation
- Stimulation of photosynthesis and respiration rates

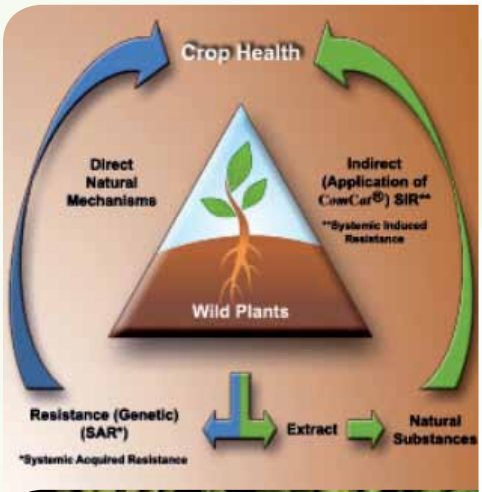
Quality improvement of agricultural products such as:

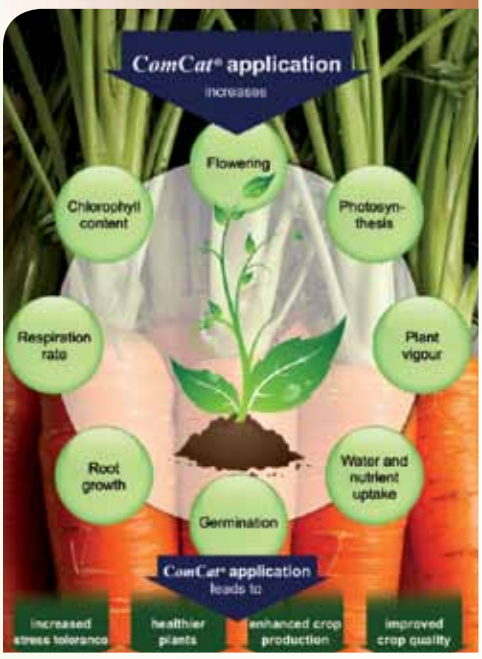
- Higher content of sugar and starch
- Improvement of sorting and fruit uniformity
- Extended shelf life of perishable products such as fruit and vegetables

Application pre-mix the recommended quantity of **ComCat®** in a suitable container. After the spray tank of the agricultural spray equipment is filled half, switch on the agitator and add the pre-mix to the water. The recommended water quantity is 200-600 l/ha. The spray volume should not exceed 2000 l/ha. **ComCat®** can be applied alone or can easily be tank-mixed with fungicides, herbicides insecticides, nutrients or inoculants. It can also be used in traditional farming practices.

If used as recommended, **ComCat®** has no harmful impact on human or animal health, soil water and the natural environment. **ComCat®** is certified for use in organic farming according to the European regulation (CE) no 889/2008 and the US Standard OMRI.

Bean field inoculated with Rhizobien and ComCat®.
Also Soja Beans reponding to the additional ComCat® treatment very well.





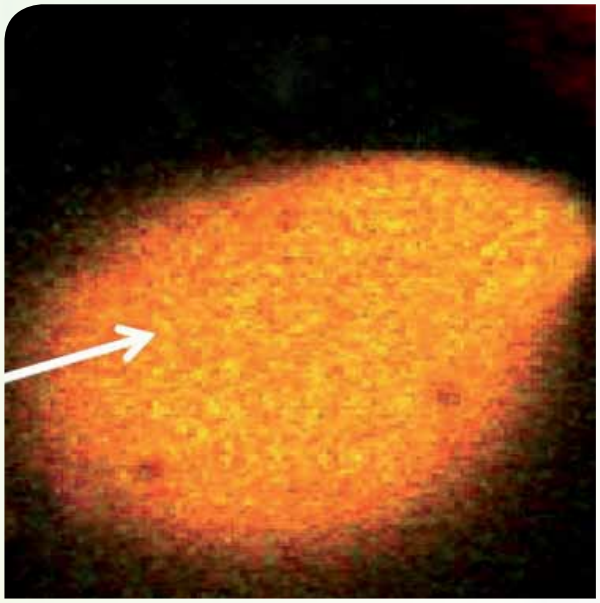
ProGrow®
Let's learn from nature!

System for certain Agriculture

AnnGro ™

LIQUID

AnnGro™ is a unique, plant- and environmentally friendly delivery system for certain agricultural remedies such as fertilizer.
These delivery sponges carry the packaged molecules at a much faster rate and to a greater extent into plants.

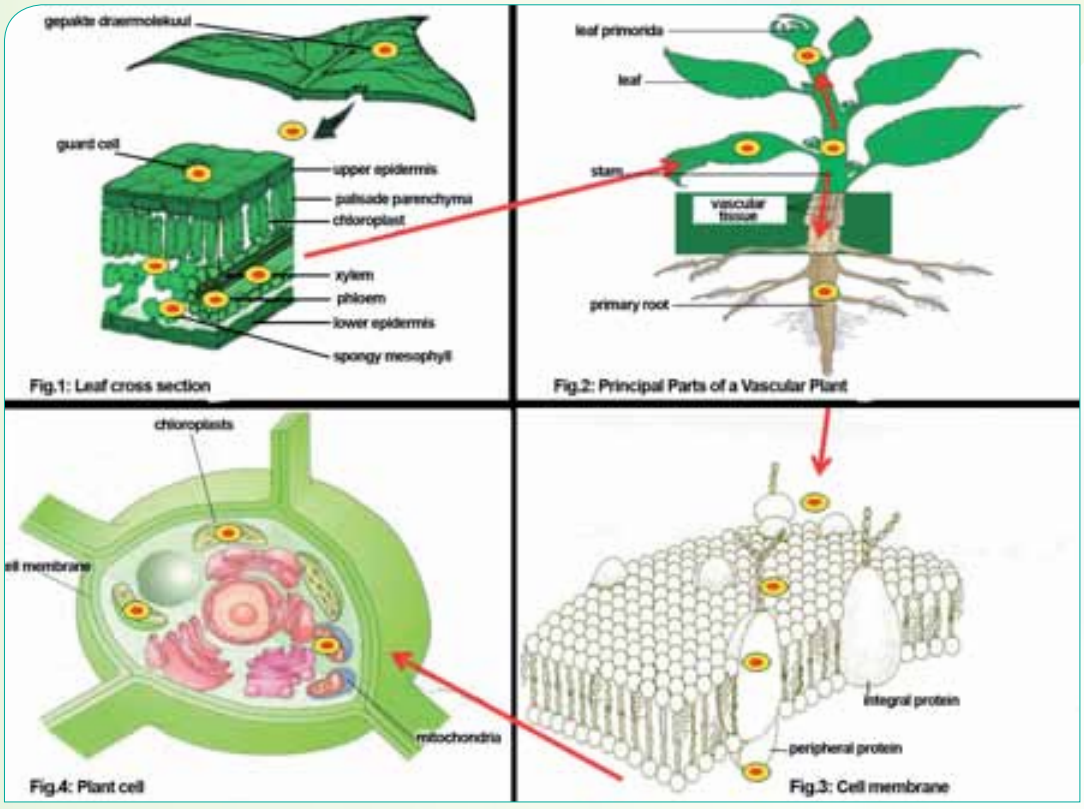


Micro-graph from an optical section of the **AnnGro**™ vesicle and a membrane.

FASTER AND BETTER UPTAKE

Patented by the North-West University (South Africa), **AnnGro**™ supports a biologically-based process that comprises of four steps: It is designed to (1) pack hydrophilic and hydrophobic molecules (2), decrease the surface tension of the formulation, to penetrate the waxy layer on leaves through the stomata (3), to translocate between different parts of the plant to cross cell walls and membranes and to deliver its packaged molecules into the plant cell. Intracellular release (4) of the molecules occurs because the ingredients of **AnnGro**™ are metabolized, supplying additional energy to the plant cell.

MOVEMENT IN THE PLANT



BENEFITS

The addition of **AnnGro**™ to water soluble plant fertilizers resulted towards enhanced uptake of such elements on vegetable-, row- and fruit-bearing crops.
AnnGro™, as a novel carrier molecule, was demonstrated to be an efficient translocator of **Com-Cat**®, exerting its bio-stimulatory effect.

APPLICATION INSTRUCTIONS

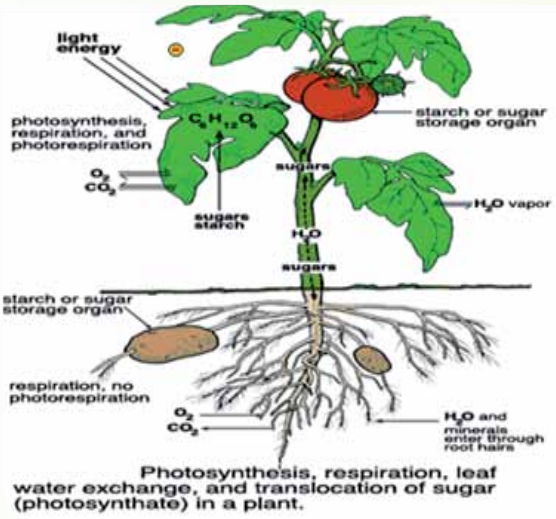
Premix **AnnGro**™ at the recommended rate (see table below) at a dilution 1/10th to 1/1000th of the final volume of water to be administered.
Add product to be packed to the **AnnGro**™ dilution, mix for at least 30 minutes (maximum 12 hours) to allow packaging of the molecules into **AnnGro**™.
Add the solution in (2) to the sprayer, agitate 3. thoroughly and apply.

APPLICATION RATE

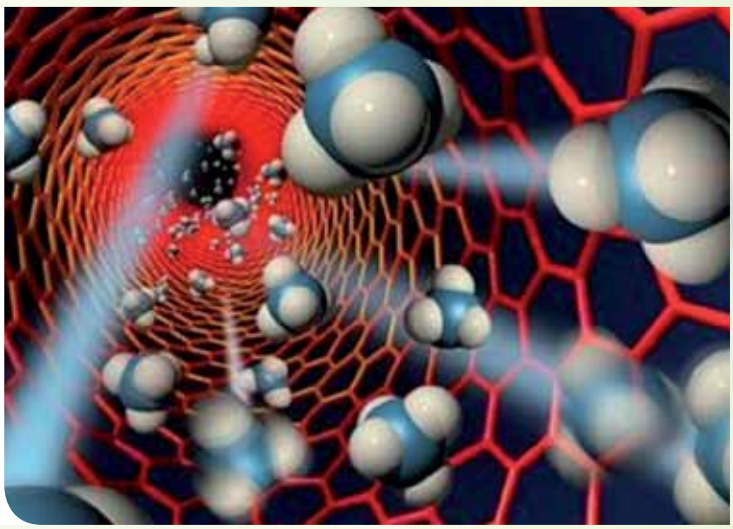
AnnGro™	Water Rate	1st dilution with water	Method of application
20 ml/100 l	100 -500 l/ha (max 60 ml/ha)	10 liter	Tractor sprayer, knap-sack sprayer
20 ml/100 l	500 – 5000 l/ha (max 120 ml/ha)	10 liter	Tractor sprayer, knap-sack sprayer

PRECAUTIONS

1. Store at room temperature (± 23° C).
2. Keep away from direct sunlight.
3. Spray early morning or late afternoon.
4. Recommended spray solution pH of 6.
5. Use freshly dissolved product at all times.



Photosynthesis, respiration, leaf water exchange, and translocation of sugar (photosynthate) in a plant.



Enhance Nutrient Transport Inside Plant

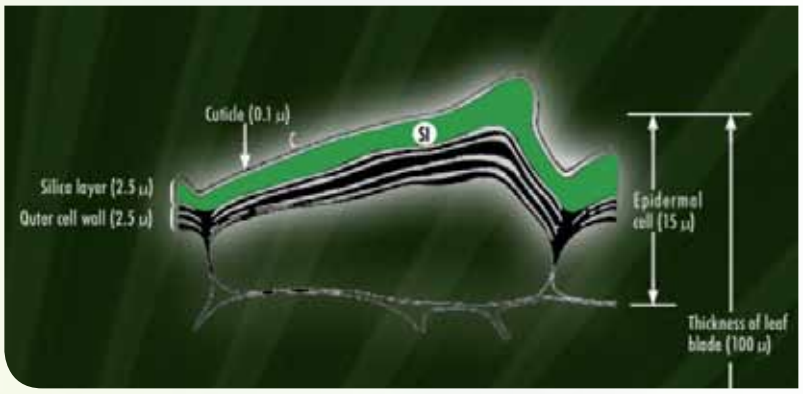
Soil & Plant Amendment

ProGrow® - 908

LIQUID

Naturally Safe – Activated Silicon Solution
Pro**Grow® 908 is supporting the plant growth & health.**

Pro**Grow® 908** is a unique, plant- and environment friendly, silicon based product that contains a high amount of monosilisic Acid [Si(OH)4] which is available for plant uptake.



Silicon accumulation in the epidermal leaf layer.




BENEFITS

- Silicon partly accumulates at the root tip that alleviates root penetration and growth.
- Silicon accumulates in the epidermal tissue (figure 1) forming a layer consisting of silica and cellulose which interacts with pectin and Ca2+, providing impedimental properties for insects (Waterkeyn et al., 1982).
- Silicon increases chlorophyll content (Adatia and Besford, 1986).
- Silicon promotes the efficient use of CO^2 by plants, therefore enhancing photosynthesis (Adatia and Besford, 1986).
- Increases crop productivity (Matichenkov et al., 1999, 2000).

DIRECTIONS FOR USE

- Apply by a spray method in an adequate amount of spray solution that will provide complete coverage of the area.
- Do not apply undiluted.

Application rates (all crops)	Dosage rate / ha	Remarks
Foliar application	Dilute 1:2000	Spray 3 and 6 weeks after emergence
Seed treatment	Dilute 1:1000	Treat seed overnight

MIXING INSTRUCTIONS

1. Fill the spray tank with half the required water volume.

2. Pre-dissolve the prescribed amount of Pro**Grow® 908** in 10-20 liter of water, add to spray tank and fill spray tank to desired volume while agitating.

Diatomaceous Earth

CleanVita®- Plant KO 56

POWDER

Application
Adjuvant material for seed treatment, as well for foliage and soil treatment of all important agriculture crops plus fruit/ nut trees, berry bushes, banana, flowers and more.

Substance:

Dry Matter = 99,0 %
Total N = 0,170 %
P2O5 = 0,0600 %
K2O = 2,37 %
MgO = 0,660 %
Calcium as CaO = 16,4 %
Sodium = 0,350 %
Ash = 94,6 %
Content as CaCO3 = 31,5 %
Content as CaO = 17,6 %
ph- 12,5

CleanVita®-Plant Ko 56 for all crops

Compatibility with fungicides: Has also been tested.

For detailed information and the User Guide are on request available, please contact us.

Seed Protection Agent

ProGrow® Seeds M 580

LIQUID

Pro**Grow® - Seed M 580** is a universal applicable bonding agent to prevent that Seed Protection Media is resistant to abrasion and for unobstructed water absorption. The seed protection agents as well as optional additives are effectively fixed by a thin film surrounding the grain.
Pro**Grow® - Seed M 580** is especially developed for all kinds of seeds and guarantees a fine finish and optimal seed protection.

Characteristics
Many Plant Protection Media (Fungicide, Repellent …) are compatible and mixable with Pro**Grow®** - **Seed M 580** and for this reason universal applicable, different food color are available.

Application
The application of the final mixed product is done normally with a "Batch Treater" and depends on the loading amount of powder & liquid additives also in tow steps.

Two Step Coating
The seeds will be wetted with water and probably mixed if necessary. Then you add Pro**Grow®** - **Seed M 580** after a good physical binding you add the additional Pro**Grow®** products (powder or liquid) plus the color you want.

There are different coating or treatment systems available & possibilities for seeds: Please contact us for more details so you can do the best.

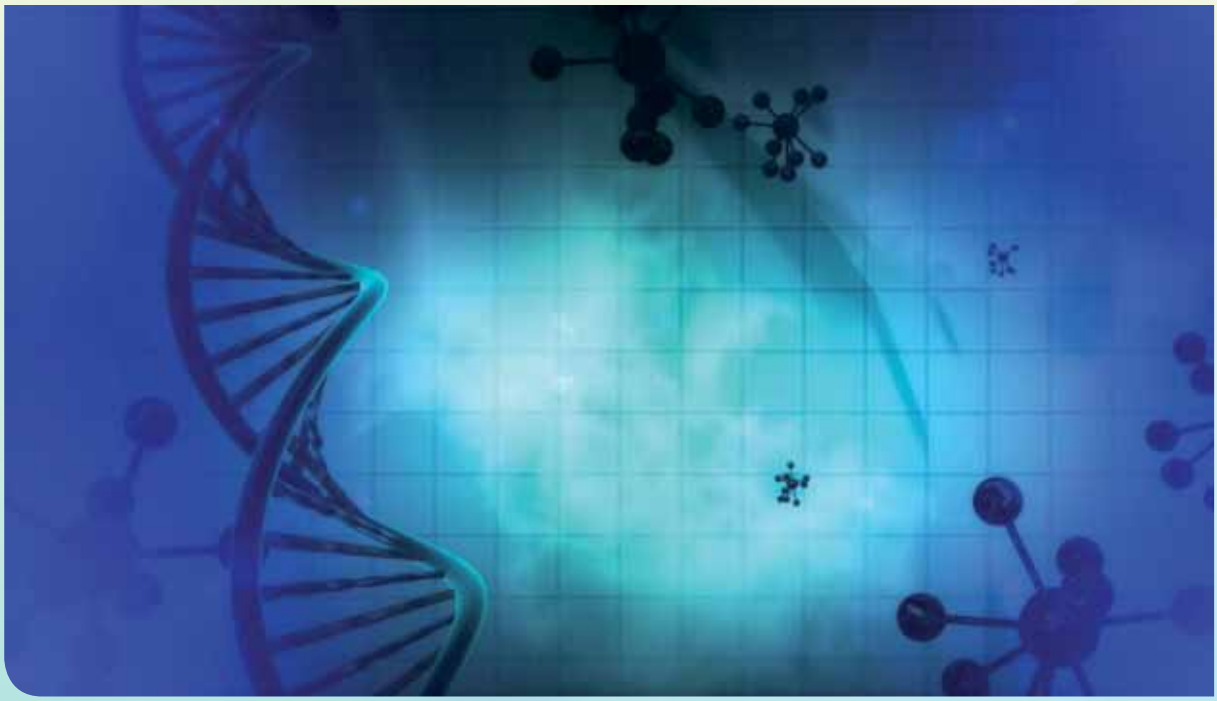
ProGrow®
Let's learn from nature!

User/Growing Guides

The following User/Growing Guides & more Technical Informations are on request available:

- Asparagus
- Berries
- Onion Crops
- Potatoes
- Strawberries
- Grape / Vine
- Fruit & Nut Trees
- Field Crops (Corn, Sunflower, Soya, Cereal, Grass etc.)
- and more on request

Data /Info Sheets for Aqua Green Farming for Fish and Shrimp please contact us.



... go for a better future with us.

Important INFO for the use of Mycorrhizae!

ProGrow®
Let's learn from nature!

PLANTS THAT FORM ASSOCIATION WITH ENDOMYCORRHIZAE

Acacia
Agapanthus
Alder (Endo/Ecto)
Alfalfa
Almond
Apple
Apricot
Artichoke
Ash
Asparagus
Aspen (Endo/Ecto)
Avocado
Bamboo
Banana
Barley
Basil
Bayberry
Beans, all
Beech
Begonia
Birch
Black Cherry
Blackberry
Black Locust
Blue Gramma
Box Elder
Boxwood
Buckeye
Bulbs, all
Cacao
Cactus
Camellia
Carrisa
Carrot
Cassava
Ceanothus
Cedar
Celery
Cherry
Chrysanthemum
Citrus, all
Clover
Coconut
Coffee
Coral Tree
Corn
Cotton
Cottonwood (Endo/Ecto)
Cowpea
Crab Tree
Creosote
Cryptomeria
Cucumber
Currant
Cypress
Dogwood
Eggplant
Elm
Eucalyptus (Endo/Ecto)
Euonymus
Fern
Fescue
Fig
Fir
Flax
Flowers, most all
Forsythia
Fuchsia
Gardenia
Garlic
Geranium
Ginger
Grapes, all
Grasses, perennials
Green Ash
Guava
Guayule
Gum
Hackberry
Hawthorn
Hemlock
Hemp
Herbs, all
Hibiscus
Holly
Hostas
Impatiens
Jatropha
Jojoba
Juniper
Kiwi
Leek
Lentil
Lettuce
Ligustrum
Lily
Locust
Lychee
Mahogany
Magnolia
Mahonia
Mango
Maples, all
Marigolds
Mesquite
Millet
Mimosa
Morning Glory
Mouth of dragon
Mulberry
Myrtle
Nasturtium
Oak
Okra
Olive
Onion
Pacific Yew
Palms, all
Pampas Grass
Passion Fruit
Papaya
Paw Paw
Peas
Peach
Peanut
Pear
Pecan
Peppers, all
Persimmon
Pineapple
Pistachio
Pittosporum
Plum
Podocarpus
Poinsettia
Poplar
Potato
Pumpkin
Raspberry
Redwood
Rice
Rose
Rubber
Ryegrass
Sagebrush
Saltbrush
Serviceberry
Sequoia
Shallot
Snapdragon
Sorghum
Sourwood
Soybean
Squash
Star Fruit
Strawberry
Succulents
Sudan Grass
Sugar Cane
Sumac
Sunflower
Sweet Gum
Sweet Potato
Sycamore
Taxus
Tea
Tobacco
Tomato
Violets
Wheat
Yam
Yucca
Willow (Endo/Ecto)

PLANTS THAT FORM ASSOCIATION WITH ECTOMYCORRHIZAE

Alder (Endo/Ecto)
Arborvitae
Arctostaphylos
Aspen (Endo/Ecto)
Basswood
Beech
Birch
Chestnut
Chinquapin
Cottonwood (Endo/Ecto)
Douglas fir
Eucalyptus (Endo/Ecto)
Filbert
Fir
Hazelnut
Hickory
Hemlock
Larch
Linden
Madrone
Manzanita
Oak
Pecan
Pine
Poplar
Spruce
Walnut
Willow (Endo/Ecto)

PLANTS THAT DO NOT FORM ASSOCIATION WITH MYCORRHIZAE

Brassica Family
Broccoli
Brussels
Cabbage
Cauliflower
Collards
Kale
Rutabaga

Ericaceae Family
Azalea
Blueberry
Cranberry
Heath
Huckleberry
Lingonberries
Rhododendron

Others
Beet
Carnation
Mustard
Orchids
Protea
Rush
Sedge
Spinach

ProGrow ® Solutions for a better AGRO WORLD!

GLOBAL SERVICES THAT REVOLVE AROUND YOU!

The ProGrow Group is offering global service to provide supplies and expertise directly at the local level. Our goal is to provide you with the best materials and information to enhance your crops. We love to help our customers and growers to achieve success!

The ProGrow products are Naturally developed to work in harmony with your crop. The result is a crop with improved health and tolerance to stress ensuring the best yield possible season after season under a wide range of weather and growing conditions.

Technical product information plus growing recommendation and technical consulting programs are available upon request.

Authorized Representative:

ProGrow®
Let's learn from nature!

PROGRESS®
Agriculture With Passion

ProGrow ® Solutions for a better AGRO WORLD!

PROGRESS Agrar Handelsgesellschaft mbH · Zinnhuette 17 · 21255 Tostedt/Germany
Phone: +49 4182 95 90 28 · Fax +49 4182 95 90 29 · E-Mail: info@progress-agrar.de · www.progress-agrar.de