

SOIL VIGOR

Application Sheet

ACTIVE INGREDIENT

Synergistic consortium of naturally occurring soil microbes.....	8.33%
Bacillus Subtilis	2x10 ⁸ cfu/g
Bacillus Licheniformis	2x10 ⁸ cfu/g
Bacillus Amyloliquefaciens	2x10 ⁸ cfu/g
Bacillus Megaterium	2x10 ⁸ cfu/g
Trichoderma Harzianum	3.6x10 ⁷ cfu/g
Trichoderma Veride	2.4x10 ⁷ cfu/g
Other Ingredients	91.67%
Total.....	100%

*Contains at least 5.0 x 10⁹ colony forming units per gram dry weight

KEEP AWAY FROM CHILDREN CAUTION

GENERAL INFORMATION

SOIL VIGOR is microbial inoculant, consists of synergistic consortium of naturally occurring soil microbes, designed and created to break down and increase the organic matter within the soil, all while freeing trapped carbon and other vital nutrients. When use soil vigor, it will fortifies the natural microbial population in the soil or potting medium with a combination of microorganisms that enhances beneficial microbial activity in the root environment. The presence of this enhanced microbial activity in the soil around developing roots improves availability, cycling and uptake of plant nutrients, and increased plant vigor.

Purpose: SOIL VIGOR is formulated to improve soils and plant vigor by restoring root zone biological activity. Use with row crops, vegetables crops, flowering plants, ornamentals, herbs, turf and bedding plants following application rates and directions in the label. SOIL VIGOR's purpose is to quickly reestablish beneficial microbes in the plant rhizosphere and improve nutrient availability.

SOIL VIGOR is cultured through a single species fermentation process, blended and tested under strict quality control conditions to ensure consistency and stability

COMPATIBILITY WITH PESTICIDES, FERTILIZERS AND ADJUVANTS

SOIL VIGOR is best used as a standalone product. Do not combine this product directly with pesticides, surfactants or fertilizers unless proven to be compatible as product has not been fully evaluated with all pesticides, fertilizers, adjuvants and surfactants.

Chemical fungicides and bactericides should not be mixed directly with or applied to the soil or growing media at the same time as SOIL VIGOR. When using with disease control products, wait at least 4 hours before applying SOIL VIGOR. When using SOIL VIGOR after soil fumigation, allow fumigants to dissipate to levels safe for planting before applying SOIL VIGOR. Allow soil or planting media treated by steam-sterilization or solarization to cool to a temperature of 100°F or lower before adding SOIL VIGOR.

Do not mix SOIL VIGOR directly with synthetic fertilizers. SOIL VIGOR may be applied in conjunction with other non-synthetic fertilizers as long as the final pH of the solution is between 6-7.

DIRECTION FOR USE

SOIL VIGOR can apply to ornamentals, vegetables, herbs, and forest tree seedlings grown in greenhouses, nurseries, and outdoors. Used as a drench it may be applied alone or with fertilizers, secondary plant nutrients, other soil amendments and/or pesticides. Contact your Tangsons Biotech representative for further information about using SOIL VIGOR in combination with other products.

Used as a drench it may be applied alone or with fertilizers, secondary plant nutrients, other soil amendments and/or pesticides.

- **DO NOT** use near silkworm or honey bee breeding
- **DO NOT** mix with fungicides/bactericides, toxic chemical or soil fumigants.
- **Contains live organism**, all microbial products should added last after all other inputs have been diluted.
- **Ideally, apply in the late afternoon. Do not exceed 60 psi. Wash hands after use.**
- **Avoid spraying close to harvest if produce is susceptible to staining**

ACTIVATION INSTRUCTION

SOIL VIGOR requires activation; Brew should be filtered prior to application.

All brewing equipment must be thoroughly cleaned before and after use. When using potentially contaminated water sources (e.g. dam water) treat water first using bleach (4% available chlorine) at a rate of 50 mL per 100 L of water. Proportional amounts of bleach will be required if the available chlorine % varies. Aerate for at least one (1) hour, until the smell of chlorine dissipates.

Bacteria Dominated: For each 50 L of water in the brewer add 100 gram sugar or molasses (Microbe Food), followed by 1 kilogram of SOIL VIGOR (sprinkling product over the surface and allowing agitation to mix). Activation with aeration and agitation for 2 – 4 hrs* at 20 – 30°C. Ideally apply as soon as possible after activation.

*Activation may require longer in cooler conditions. Monitor the brew closely. Heavy frothing is a sign of completion of a bacterial dominated brew and the brewer can now be turned off. Fungal brews should show minimal frothing.

Ensure compliance with your quality assurance code of practice regarding the use of microbial products before use.

APPLICATION INSTRUCTION

FRUITS, VEGETABLES AND OTHER FIELD GROWN CROPS

Soil treatment:

Direct Inject Applications:

- Apply SOIL VIGOR to soil through drip or overhead irrigation systems at a rate of 1 kilogram per acre prior to or immediately after sowing or transplanting.
- Calculate required amount of SOIL VIGOR based on number of acres to be treated.
- Prepare a stock solution by mixing SOIL VIGOR in enough water to completely dissolve powder. Mix every 1 kg of SOIL VIGOR with at least 50 liter of water.
- Mix SOIL VIGOR under continuous agitation or circulation. Add powder slowly to the mix tank to avoid clumping. Powder must be thoroughly saturated to dissolve completely.
- Thoroughly mix solution. If necessary, probe bottom of mix tank to check for any un-dissolved powder prior to off-take.
- A variable range coarse spray nozzle should be used if irrigation system. Positive displacement pumps and the use of filters are recommended.

- Filter the stock solution prior to inject into irrigation system to ensure sufficient distribution of SOIL VIGOR.
- For best results, apply when soil temperatures are above 10°C.
- If using other products for soil plant pathogen control, always apply these products first and wait several hours before applying SOIL VIGOR, making sure lines have been flushed for 15-20 minutes prior to injecting SOIL VIGOR.
- Repeat at 3-4 week intervals throughout crop growing season.

System Cleanout: Back flush system and filters with water for approximately 5-10 minutes after application to remove any loose minute particles that did not pass through filter. Rinse all exposed equipment including mix tank bottoms, lines, nozzles etc. to remove any particulates that may have collected in areas of low velocity.

In-Furrow and Soil Drench Applications:

- **As an in-furrow application at the time of planting:**

Mix 500 gram of SOIL VIGOR in 50 liter of water per acre and apply at planting directly over or behind the seed prior to covering.

- **As a soil drench prior to or after crop establishment:**

Mix 1 kilogram of SOIL VIGOR per 378 liter of water and thoroughly drench the root zone with the solution.

GREENHOUSE FOOD CROPS AND ORNAMENTALS

Soil or Media Drench:

Mix SOIL VIGOR according to chart below. Apply as a spray or drench. Apply to soil or growing media in flats, plugs, trays, pots or planting beds immediately before or after seeding, sticking, or transplanting.

Soil/Growing Media Depth	SOIL VIGOR per 100 Gallons
2"	50 gram
4"	100 gram
6"	150 gram
>6"	200 gram

Post-Planting Applications:

- Use 50 gram of SOIL VIGOR per 1,000 sq. ft. of plant area per 2" of soil depth. Mix SOIL VIGOR in 1 gallon of clean, cool water and apply entire solution to plant area using a conventional chemical injector set at 1:200.
- Reapply once every 3-4 weeks throughout crop growing season.

Turf:

- Apply SOIL VIGOR to all types of cool and warm weather turf varieties throughout the season when soil temp is 10°C or higher.
- Use a rate of 50 gram per 1,000 sq. ft. of turf in sufficient water to drench SOIL VIGOR to a depth of 3-6 inches.
- Reapply every 3-4 weeks.

Hydroponic System Application:

- Add SOIL VIGOR at a rate of 50 gram per 100 gallons of nutrient tank water when transplants are first placed in the trays. Run the solution through the system for thorough mixing.
- Repeat applications every time fresh water is added to the system or once every 7-10 days using 5-10 gram of SOIL VIGOR per 100 gallons of nutrient tank water.
- If transplant roots are already dipped in the SOIL VIGOR solution prior to placement in the trays, wait 7-10 days before making the first application of SOIL VIGOR to the nutrient tank water.

Soil-less Media Applications

- Direct inject at 1 gram per gallon on a weekly basis. Mix 50 grams per gallon stock tank and set injector to 1:100 for final dilution. Drench to saturation while minimizing leach.

Cutting and Root Dip Applications for Field Grown/Greenhouse Food Crops, Ornamentals and Hydroponic Crops

- Dissolve 50 gram of SOIL VIGOR per 10 gallons of water. Dip basal end of cuttings or bare roots into the solution for 10-20 seconds immediately before planting.

CROPS ON WHICH SOIL VIOGOR CAN BE USED GROWING CROPS (OUTDOORS AND IN GREENHOUSES):

ROOT AND TUBER VEGETABLES: Including: Arracacha, Arrowroot, Purple Arrowroot, Japanese Artichoke, Jerusalem Artichoke, Garden Beets, Sugar Beets, Edible Burdock, Edible Canna, Carrots, Cassava (bitter or sweet), Celeriac (celery root), Chayote (root), Chervil (turnip rooted), Chicory, Chufa, Dasheen, Ginger, Ginseng, Horseradish, Leren, Parsley (turnip rooted), Parsnip, Potato, Radish, Japanese Radish (Daikon), Rutabaga, Salsify, Black Salsify, Spanish Salsify, Sweet Potato, Tanier, Turmeric, Turnip, Yam (true), Yam Bean.

LEAVES OF ROOT AND TUBER VEGETABLES: Including: Garden Beet, Sugar Beet, Edible Burdock, Carrot, Cassava (bitter or sweet), Celeriac (celery root), Chervil (turnip rooted), Chicory, Dasheen (taro), Parsnip, Radish, Japanese Radish (Daikon), Rutabaga, Black Salsify, Sweet Potato, Tanier, Turnip, Yam (true).

BULB VEGETABLES: Including: Garlic, Great-headed Garlic, Leek, Onion (bulb and green), Welch, Shallot.

LEAFY VEGETABLES: Including: Amaranth (leafy amaranth, Chinese spinach, tampala), Arugula, Cardoon, Celery, Chinese Celery, Celtuce, Chervil, Cilantro, Corn Salad, Chrysanthemum (edible-leaved), Chrysanthemum (garland), Cress (garden, water), Upland Cress (yellow rocket, winter cress), Dandelion, Dock (sorrel), Endive (escarole), Fennel (Florence), Lettuce (head and leafy), Orach, Parsley, Purslane (garden and winter), Radicchio, Rhubarb, Spinach, Fine Spinach (Malabar, Ceylon), Spinach (New Zealand), Swiss Chard.

BRASSICA (COLE) LEAFY VEGETABLES: Including: Broccoli, Chinese Broccoli (Gai Lan), Broccoli Raab (Rapini), Brussels Sprouts, Cabbage, Chinese Cabbage (Bok Choy), Chinese Cabbage (Napa), Chinese Mustard Cabbage (Gai Choy), Cauliflower, Cavalo Broccolo, Collards, Kale, Kohlrabi, Mizuna, Mustard Greens, Mustard Spinach, Rape Greens.

LEGUME VEGETABLES (SUCCULENT OR DRIED): Including: Adzuki Beans, Field Beans, Kidney Beans, Lima Beans, Moth Beans, Mung Beans, Navy Beans, Pinto Beans, Rice Beans, Runner Beans, Snap Beans, Tepary Beans, Urd Beans, Wax Beans, Asparagus Beans, Black-eyed Peas, Catjang, Chinese Longbeans, Cowpeas, Crowder Peas, Southern Peas, Yard-Longbeans, Broad Beans (fava beans), Chick Peas (garbanzo beans), Guar, Jackbean (sword bean), Lablab Bean (hyacinth bean), Lentils, Peas (garden peas, field peas, sugar snap peas, English pea, snow pea), Pigeon Peas, Soybeans, Sweet Lupin Beans, White Lupin Beans, White Sweet Lupin, Sword Bean.

FOLIAGE OF LEGUME VEGETABLES: Including: Plant part of any legume vegetable included in the legume vegetable group that will be used as animal feed including any variety of Beans, Field Peas, Soybeans.

FRUITING VEGETABLES: Including: Eggplant, Ground Cherry, Okra, Pepinos, Pepper (bell pepper, chili pepper, cooking peppers, pimentos, sweet peppers), Tomatillo, Tomatoes.

CUCURBIT VEGETABLES: Including: Balsam Apple, Balsam Pear (bitter melon), Chayote (fruit), Chinese Waxgourd (Chinese preserving melon), Chinese Cucumber, Citron Melon, Cucumber, Gherkin, Edible Gourds, Melons (including hybrids, cantaloupe, casaba, crenshaw, golden pershaw melon, honeydew melons, honey balls, mango melon, muskmelon, Persian melon, pineapple melon, Santa Claus melon, snake melon), Pumpkin, Squash (summer and winter), Watermelon (including hybrids).

CITRUS FRUITS: Including: Calamondin, Citrus Citron, Citrus Hybrids, Grapefruit, Kumquats, Lemons, Limes, Mandarin (tangerine), Orange (sweet and sour), Pummelo, Satsuma Mandarin, (Citrus spp. includes chironja, tangelos, tangors).

POME FRUITS: Including: Apple, Crabapple, Loquat, Pear, Mayhaw, Oriental Pear, Quince.

STONE FRUITS: Including: Apricot, Cherry (sweet and sour), Nectarine, Peach, Plum, Prune, Chickasaw Plum, Damson Plum, Japanese Plum, Plumcot.

SMALL FRUITS AND BERRIES: Including: Blackberry, Blueberry, Cranberry, Currant, Dewberry, Elderberry, Gooseberry, Grape, Huckleberry, Loganberry, Olallie Berry, Raspberry (black and red), Strawberry, Youngberry.

TREE NUTS: Including: Almond, Beech Nut, Brazil Nut, Butternut, Cashew, Chestnut, Chinquapin, Filbert (hazelnut), Hickory nut, Macadamia Nut (bush nut), Pecan, Pistachio, Walnut, Black and English (Persian).

ORIENTAL VEGETABLES: Including: Acerola, Atemoya, Balsam Pear (bitter melon), Carambola, Japanese Artichoke, Chinese Broccoli (Gai Lan), Chinese Cabbage (Bok Choy, Napa), Chinese Mustard Cabbage (Gai Choy), Dasheen, Ginger, Ginseng, Chinese Longbeans, Mung Beans, Citron Melon, Japanese Radish, (Daikon), Chinese Spinach, Chinese Waxgourd, Cilantro, Citron Melon, Rambutan, Water Chestnut.

SUBTROPICAL FRUITS: Including: Avocado, Banana, Carob, Barbados Cherry, Cherimoya, Dates, Durian (jackfruit), Feijoa, Figs, Guava, Kiwifruit, Lychee, Mango, Papaya, Passion Fruit, Persimmon, Pineapple, Pomegranate.

CEREAL GRAINS: Including: Barley, Buckwheat, Corn (sweet and field), Millet, Proso, Oats, Pearl Millet, Popcorn, Rice, Rye, Sorghum (Milo), Teosine, Triticale, Wheat, Wild Rice.

FORAGE, FODDER AND STRAW OF CEREAL GRAINS: Including: Barley, Buckwheat, Corn (sweet and field), Millet, Proso, Oats, Pearl, Popcorn, Rice, Rye, Sorghum (milo), Teosine, Triticale, Wheat, Wild Rice.

GRASSES FOR SEED, FORAGE, FODDER AND HAY: Including: any Grass (Gramineal family, green or cured, except sugarcane and those listed in the cereal grains group), that will be fed to or grazed by livestock, all Pasture and Range Grasses and Grasses grown for hay and silage, Bermuda Grass, Bluegrass, Bromegrass, Fescue.

NON-GRASS ANIMAL FEEDS: Including: Alfalfa, Velvet Bean, Clover, Kudzu, Lespedeza, Lupine, Sainfoin, Trefoil, Crown Vetch, Milk Vetch.

HERBS AND SPICES: Including: Allspice, Angelica, Anise (anise seed), Anise (star), Annatto (seed), Balm (lemon balm), Basil, Borage, Burnet, Camomile, Caper buds, Caraway, Caraway (black), Cardamom, Cassia bark, Cassia buds, Catnip, Celery seed, Chervil (dried), Chicory, Chive, Chive (Chinese), Cinnamon, Clary, Clove buds, Coriander (cilantro or Chinese parsley) (leaf), Coriander (cilantro) (seed), Costmary, Culantro (leaf), Culantro (seed), Cumin, Curry (leaf), Dill (dillweed), Dill (seed), Fennel (common), Fennel (Florence) (seed), Fenugreek, Grains of Paradise, Horehound, Hyssop, Juniper Berry, Lavender, Lemongrass, Lovage (leaf), Lovage (seed), Mace, Marigold, Marjoram (includes sweet or annual marjoram, wild marjoram or oregano and pot marjoram), Mustard (seed), Nasturtium, Nutmeg, Oregano, Mint, Paprika, Parsley (dried), Pennyroyal, Pepper (black), Pepper (white), Poppy (seed), Rosemary, Rue, Saffron, Sage, Savory (summer and winter), Sweet bay (bay leaf), Tansy, Tarragon, Thyme, Vanilla, Wintergreen, Woodruff, Wormwood.

ADDITIONAL PLANTS: Including: Artichoke, Asparagus, Avocado, Coffee, Cotton, Hops, Jojoba, Mushroom, Okra, Olives, Peanuts, Pineapple, Rice, Safflowers, Sesame, Sugar Cane, Sunflower, Tea.

USE ON GREENHOUSE FRUITS, VEGETABLES, FLOWERS AND FOLIAGE PLANTS

USED ALONE: Apply 2 -3 gram per liter of water, Use 20 gallons water minimum per acre when using ground equipment for applications with conventional hydraulic sprayers or apply 2 -3 gram per liter of water for applications with compressed sprayers.

STORAGE AND DISPOSAL

Do not contaminate water, food, or feed by storage and disposal.

PESTICIDE STORAGE

Store in a cool, dry place, out of direct sunlight, and away from heat sources for up to 18 months. Keep from overheating.

PESTICIDE DISPOSAL

To avoid wastes, use all material in this container by application according to label directions. If wastes cannot be avoided, offer remaining product to a waste disposal facility or pesticide disposal program (often such programs are run by state or local governments or by industry).

CONTAINER HANDLING

Nonrefillable container. Do not reuse or refill this container. Completely empty bag into application equipment. Then offer for recycling if available or dispose of empty bag in a sanitary landfill or by incineration. Do not burn, unless allowed by state and local ordinances. If burned, stay out of smoke. If outer box is contaminated, dispose of it in the same manner as required for the bag

NOTICE TO BUYER AND SELLER:

Seller warrants that this product conforms to the description on the label and is reasonably fit for the purposes stated on the label when used and stored in accordance with directions under normal conditions of use. To the extent permitted by state law, this warranty does not extend to use of this product contrary to label directions or under conditions not reasonably foreseeable by the Seller, and Buyer and User assume the risk of any such use. To the extent permitted by state law, Seller disclaims all other warranties express or implied, including any warranty of fitness or merchantability. To the extent permitted by state law, Seller shall not be liable for consequential, special or indirect damages resulting from use or handling of this product and Seller's sole liability and Buyer's and user's exclusive remedy shall be limited to refund of the purchase price. This product is sold only for uses stated on its label. No express or implied license is granted to use or sell this product under any patent in any country except as specified.