

BIOSOL®

GENERAL DESCRIPTION

MANUFACTURE:

During the manufacture of penicillin, a fungal biomass (mycelium) is obtained by the fermentation of raw materials such as: soybean meal, cottonseed meal, sucrose, lactose, trace elements and vitamins under constant sterile conditions. The fungus strain used is *Penicillium Chrysogenum*. After the penicillin is removed, the remaining biomass is dried at 110 to 130° C for 3 to 4 hours. During this process the residual antibiotic is eliminated and the moisture is reduced by 3 to 6%. Then, 3% potassium-magnesia, from a naturally occurring source, is added to the dried biomass (dry mycelium). Finally, the mixture is granulated and placed in 55-pound (25 kg) recyclable plastic bags.

Biosol is sterilized and free of weed seeds.

COMPOSITION:

96% fungal biomass (dry mycelium), 1% water, and 3% potassium magnesia.

NUTRIENT RATIO:

N-P-K = 6-1-3

Specifications:

Organic Substance.....	> 70%
Carbon/Nitrogen Ration.....	6:1
Nitrogen (total).....	> 6%
Nitrogen (water soluble).....	< 0.5%
Phosphorus (P ₂ O ₅).....	1-2%
Potash (K ₂ O).....	3-4%
pH level.....	4

Heavy Metal Contents:

Nickel (Ni).....	mg/kg of DS.....	< 50
Chromium (Cr).....	mg/kg of DS.....	< 50
Lead (Pb).....	mg/kg of DS.....	< 50
Cadmium (Cd).....	mg/kg of DS.....	< 1
Mercury (Hg).....	mg/kg of DS.....	< 0.1
Zinc.....	mg/kg of DS.....	< 100

Please note: The heavy metal contents are within the tolerance limits for animal feed.

Properties:

Slow release of the organically bound nitrogen provides sufficient supply of this vital nutrient to plants. There is a positive effect on the formation of humus, root mass, and the living microbial biomass. This results in far lower concentrations of nitrate in ground water than mineral fertilizers. Safe to be used in grassland, wetlands and environmentally sensitive areas.

APPLICATIONS:

Organic Farming

Biosol will attribute to stronger and healthier crops while enhancing the vitality of your soil therefore producing higher crop yields in a natural way.

California Certified Organic Farmers, Inc. has approved and certified Biosol for use in organic farming. It has also been approved for organic farming in Washington, Oregon and Massachusetts.

REVEGETATION OF DISTURBED SOILS WITH LOW HUMUS CONTENT:

Mining Reclamation, Road Cut Revegetation, High Altitude Revegetation

- ❖ Biosol is used for both primary and secondary fertilization despite the soil quality.
- ❖ Biosol stimulates micro-organism activity in soils.
- ❖ It can be dry broadcasted or applied with a Hydroseeder. There is no appreciable difference in the results.

Application Rates: 800 – 1,800 lbs. Per acre.

Viticulture (cultivation of grapes)

Biosol has been used all over the world for several years with superior results. During thirteen years of experiments and trials from 1988 – 2001, Biosol was proven to increase sugar yields in grapes. The average yearly sugar yield was increased by approx. 13%.

Application rate: 600-900 lbs. Per acre

Forestry

Biosol has been used and tested by Forestry Services and Departments all around the world.

Application Rates: Young Trees 3 oz. Per plant
Mature Trees 6 oz. Per plant

Golf Courses

The lasting efficiency of Biosol is particularly advantageous. First year applications should always be the heaviest. Application rates after the first year may be reduced.

Application Rates: 2000 lbs. Per acre for fairways per year.
1000 lbs. early spring, 1000 lbs. late fall.

Lawns, Gardens, Flowers, Trees, etc.

Biosol will not burn vegetation but should be watered in (if possible) for best results. Biosol was originally sold as a feed for livestock and fish; therefore it is safe to apply in areas where animals and children may play.

Application Rates:

Lawns and Playing Fields:	33 lbs. Per 1,000 sq. feet
Garden Preparation:	2 oz. Per sq. yard (1/3 cup)
	1 1/3 lbs. Per 100 sq. feet (3 3/4 cups)
Potted Flowers and Compost:	1/2 oz. Per gallon (1/8 cup)
Vegetables:	1 1/2 oz. Sq. yard (3/4 cup)
Ornamental Trees, Shrubs:	6 oz. Per sq. yard (1 cup)

Fertilizing young plants:

Good & Proper Farming Practices should always be followed when using Biosol.

It is very important that Biosol is spread on the soil surface. If you want to plant young plants add Biosol to the soil at least two weeks before planting actually occurs. This is especially important with Tomatoes and Peppers.

Biosol is employed for the following properties:

- Biosol improves plant health (chlorosis, stem disease, blossom drop).
- It increases the sugar content (sugar content expressed as degree Oechsle, Brix, or Balling)
- It promotes quality ripening of fruits and vegetables.
- Stimulates micro-organism activity in the soil.
- Biosol should always be applied topically.
- Increases crop yields.

Unlike many natural fertilizers, Biosol is easy to transport and use. The product is packaged in sturdy plastic bags, which may be recycled (#4). Biosol is granulated and suitable for all standard application methods, including hydroseeding. Biosol will not burn seed or existing vegetation.



OUR DISTRIBUTION CENTERS:

- ◆ California (Carson, Livermore, Oakland)
- ◆ Colorado (Denver, Edwards, Longmont)
- ◆ Idaho (Boise)
- ◆ Washington (Spokane)



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BIOSOL 6 - 1 - 3 NATURAL - ALL PURPOSE FERTILIZER NET WEIGHT: 55 lbs

GUARANTEED ANALYSIS:	TOTAL NITROGEN (N)*	6%
	0.50% WATER SOLUBLE	
	5.50% WATER INSOLUBLE*	
	AVAILABLE PHOSPHATE (P2O5)	1%
	SOLUBLE POTASH (K2O)	3%



PLANT NUTRIENTS DERIVED FROM: FERMENTATION OF SOYBEAN MEAL, COTTONSEED MEAL, SULFATE OF POTASH MAGNESIA

*5.5% Slowly Available Nitrogen from cottonseed and soybean meal.
STERILIZED AND FREE OF WEED SEEDS.

PROPERTIES: Biosol is a natural, environmentally safe fertilizer with high organic content (97% natural organic). Biosol is a long acting, slow release nitrogen fertilizer with a well-blended nutrient ratio. Biosol is dried, pelletized and bagged for convenient transportation, storage and application.

APPLICATION RATES

VEGETATION OR PLANT TYPE	BY WEIGHT	BY VOLUME (DRY)	LBS PER 1000 sq. ft.	WHEN TO FERTILIZE
Home Use				
lawns	1 Bag covers 2,000 sq. ft.		25 to 30	spring and fall
garden preparation	2 oz / square yard	1/3 cup	14 lbs	spring through fall
seeded row crops	1 1/3 cup per 100 sq. ft., e.g., per 2" inch x 50' foot furrow. Sprinkle Biosol down row; plant seeds.			
house plants - 8"-10" Pots	mix 3 oz. (1/2 cup) into top 1-2 inches and lightly cover with potting mix or top soil.			
Unfortified potting soil mixes for potted plants all sizes	4 cups per 1.5 cubic ft. Use when planting (into) a pot, do not apply topically; use for house plant repotting, window boxes, container growing, etc.			
From pony packs to B & B. Biosol is added in hole and in medium around plant. Whether flowers, vegetables, shrubs, trees.				
Pony pack to 4 inch pots	1oz Per Plant added to backfill.			spring through fall
1 to 2 gallon pots	1 lbs Per Plant added to backfill.			spring through fall
3 to 5 gallon pots	2 lbs Per Plant added to backfill.			spring through fall
B & B Root ball & Burlap.	1 cup per each foot diameter root ball. Mix in medium under and directly around the root ball.			
flower gardens (planting)	2 oz / square yard	1/3 cup	14 lbs	spring through fall
vegetable gardens (planting)	2 oz / square yard	1/3 cup	14 lbs	spring through fall
compost preparation	10-20 lbs/yd ³			anytime of the year

For Per Plant Home Use see below

Farming, Gardening & Home use Rates	Per Plant	LBS PER 1000 sq. ft.	WHEN TO FERTILIZE
vegetables (all types)	2 oz / square yard	2 tbs	14 to 20
corn	1,300-1,600 lbs/acre	3/4 cup	30 to 36
pulses, cereals	500-900 lbs/acre	1 tbs	12 to 21
potatoes	900-1,400 lbs/acre	1/4 cups	21 to 32
sugar beets	800-1,300 lbs/acre	2 tbs	18 to 30
strawberries, tomatoes	900-1,200 lbs/acre	2 tbs	21 to 28
vineyards	600-900 lbs/acre	3/4 cup	14 to 21
young fruit plantation	600-800 lbs/acre	1 cup	14 to 18
fruit plantation	500-700 lbs/acre	3/4 cup	12 to 16
berry shrubs	600-800 lbs/acre	1 1/2 cups	14 to 18
meadows, pastures	800-1,000 lbs/acre		18 to 23
Forestry Use			
young forests, plants, trees	3 oz/plant	1/2 cup	14 to 21
tree nursery	1,000-1,400 lbs/acre	1/2 cup	23 to 32
ornamental trees, shrubs	6 oz/square yard	1 cup	44 lbs
mature trees	1 lb per 3 feet of tree height		
Reclamation Use			
reclamation (road banks, mine reclamation), hydroseeding, mulch, dry seeding	poor soils: 1,500-1,800 lbs/acre good soils: 1,000-1,300 lbs/acre		34 to 41 23 to 30
maintenance fertilization, reclamation sites	poor soils: 1,000-1,500 lbs/acre good soils: 800-1,100 lbs/acre		23 to 34 18 to 25
compost preparation	10-20 lbs/yd ³		
Turf Grass			
playing / sports fields, Parks	2000 lbs/acre		25

Important Measurements

EQUIVALENTS: 0.5 oz = 2 tbs; 3 oz = 1/2 cup; 6 oz = 1 cup; 2 2/3 cups = 1 lb; 13 1/3 cups = 5 lbs.

DIRECTIONS FOR USE

Biosol may be applied at any time, except over snow. Biosol should always be applied topically. The application rates may be adjusted to fit any special soil or nutrient requirements. Biosol will not burn vegetation when used properly. Biosol is used for primary and maintenance applications. It will stimulate the micro-organisms in the soil. Biosol can be dry broadcasted or applied with a hydroseeder.

Care should be taken when applying fertilizer, particularly when planting young green plants. For garden preparation, the fertilizer should be spread out at least two weeks before planting young plants. When fertilizing young plants, there should be a gap of 5 cm - 1-2 inches between plants and fertilizer. * Keep dry while storing and protect against UV-radiation.

A product of Austria, manufactured by Sandoz G.m.b.H.

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Information regarding the contents and levels of metals in this product is available on the internet at <http://www.aapfco.org/metals.html>