

# BIOSOL®

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## GENERAL DESCRIPTION

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### 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%.

Biosol is listed with OMRI and approved for organic farming.  
Biosol is a fermented plant based organic fertilizer, sterilized and free of weed seeds.

### COMPOSITION:

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95% fungal biomass (dry mycelium), 5% water

### NUTRIENT RATIO:

**N-P-K = 6-1-1**

#### Specifications:

##### Guaranteed Analysis:

Total Nitrogen (N).....	6%
WATER SOLUBLE NITROGEN    0.50%	
WATER INSOLUBLE NITROGEN* 5.50%	
Available Phosphoric (P <sub>2</sub> O <sub>5</sub> ).....	1%
Soluble Potash (K <sub>2</sub> O).....	1%

\*5.5% Slowly Available Nitrogen from fermented organic material

##### Nutrients Derived from Fermented Cottonseed Meal and Soybean Meal

Organic Matter: .....	> 90%
Carbon/Nitrogen Ratio.....	5:1
pH level.....	4.0

**Biosol does not contain any animal waste, animal by-products or chemicals.**  
Any heavy metal contents are within the tolerance limits for animal feed.

### PROPERTIES:

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Biosol's beneficial biomass enhances soil health and microbial life. This unique slow release nutrient formulation provides vital plant nutrients throughout the entire growing season due to the fermented organic material. There is an increased effect on the formation of humus, root mass and the living microbial biomass in the soils. Promoting a healthy balance of microbial life ensures long-term plant color and plant health. This results in far lower concentrations of nitrates or phosphorous in ground water than mineral fertilizers. Biosol will not burn seed or vegetation.

**Biosol is safe to be used around pets, animals, children, lakes and streams.**

## MATERIAL COMPARISONS

<u>Product Benefits</u>	<u>Biosol</u>	<u>Biosol Forte</u>	<u>Poultry Manure</u>	<u>Chemical Fertilizer</u>	<u>Composted Fert/ Mix</u>	<u>Compost</u>
Positively affects soil fertility	+++	+++	+	---	--	++
Positively affects soil structure	+++	+++	+	---	--	++
Positively affects soil microorganisms	+++	+++	+	---	--	++
Derived from animal waste or chemicals	No	No	Yes	Yes	Yes	Some
Derived from 100% plant product	Yes	Yes	No	No	No	Some
Provides beneficial bacteria & fungal biomass	+++	+++	---	---	---	---
Topsoil alternative	+++	+++	--	---	-	+++
High content of organic matter	+++	+++	+	---	--	+
Effect on humus content	+++	+++	-	--	-	+++
High content of chitin	+++	+++	---	---	---	---
Nutrient content	+	+	+	+++	+++	-
Risk of burning seed or existing vegetation	---	---	-	+++	+++	---
Risk of nitrogen leaching	---	---	+	+++	+++	---
Positively affects root system	+++	+++	+	-	-	+
Positive effects in arid conditions	+++	+++	+	---	--	++
Nutrients available in 2 <sup>nd</sup> growing season	+++	+++	-	---	--	++
High in salts	---	---	+	+++	+++	--
Risk of plant disease / pathogens	---	---	+	+++	+++	+
EPA approved for water sensitive areas	+++	+++	--	---	---	---
Field tested, proven for long term plant growth	+++	+++	--	---	---	+
USDA Bio Preferred Product	Yes	Yes	Some	No	No	No
Certified for organic crop production	Yes	No	Some	No	No	Some
Animal and child friendly	+++	+++	-	---	--	++
Retains 3-4 times its weight in water	+++	+++	--	---	--	+++

Very, Very Strong    +++  
 Very Strong        ++  
 Strong                +

### Rating

Very, Very Low    ---  
 Very Low            --  
 Low                    -

## APPLICATIONS:

### Organic Farming

Biosol will contribute to stronger and healthier crops while enhancing the vitality of your soil, producing higher crop yields in an organic way. Biosol is regularly checked and OMRI listed for organic farming. Used in many areas, from arable farming to grassland, Biosol is particularly effective in organically grown vegetables, berries or apples. Biosol increases the plant's resistance to certain pathogens and suppresses the ability of soil-borne pathogens to affect plant life and soil health.



### Viticulture (Grape Cultivation)

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

## **Lawns, Gardens, Flowers, Trees, etc.**

Biosol will not burn vegetation, should always be applied topically and should be watered in (if possible) for best results.

### **Application Rates:**

Lawns and Playing Fields:	13 - 25 lbs. per 1,000 sq. feet twice per year
Garden Preparation:	2 oz. per sq. yard (1/3 cup)
Seeded Row Crops:	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:	2 oz. per sq. yard (1/3 cup)
Ornamental Trees, Shrubs:	6 oz. per sq. yard (1 cup)
Soil Mixes:	8 1/2 lbs. per cu yard

## **Fertilizing Young Plants**

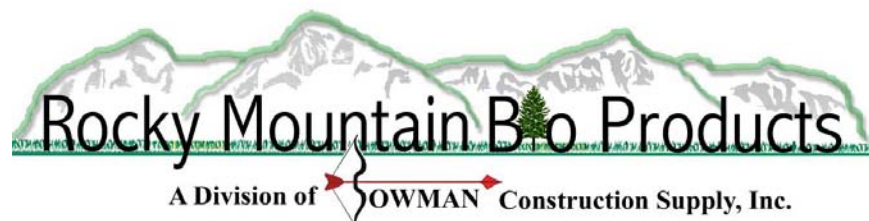
Good & proper farming practices should always be followed when using Biosol. It is very important that Biosol is spread on the soil surface. If you want to plant young plants, add Biosol to the soil at least two weeks before planting actually occurs. This is especially important with tomatoes and peppers.

### **Biosol is used for the following qualities:**

- Enriches soil with quality nutrients.
- Stimulates micro-organism activity in the soil.
- Improves plant health (chlorosis, stem disease, blossom drop).
- Increases crop yields.
- Increases the sugar content (content is expressed as degree Oechsle, Brix, or Balling).
- It promotes quality ripening of fruits and vegetables.

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# BIOSOL

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NATURAL - ALL PURPOSE FERTILIZER

GUARANTEED ANALYSIS:	TOTAL NITROGEN (N)	6%
	0.50% WATER SOLUBLE NITROGEN	
	5.50% WATER INSOLUBLE NITROGEN*	
	AVAILABLE PHOSPHATE (P <sub>2</sub> O <sub>5</sub> )	1%
	SOLUBLE POTASH (K <sub>2</sub> O)	1%

**BIOSOL**  
Organic Fertilizer

PLANT NUTRIENTS DERIVED FROM FERMENTATION OF SOYBEAN MEAL, COTTONSEED MEAL.

\*5.5% Slowly Available Nitrogen from fermented organic material.

Sterilized and free of weed seed.

PROPERTIES: Biosol is a natural, environmentally safe fertilizer with high organic content (all 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	LBS PER 1000 sq. ft.	WHEN TO FERTILIZE
<b>Home Use</b>				
Lawns	1 Bag covers 2,000 - 4,000 sq. ft.		13 to 25	spring and fall
Garden preparation	2 oz / square yard	1/3 cup	13.5 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 cubic yard. 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 or 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	13.5 lbs	spring through fall
Vegetable gardens (planting)	2 oz / square yard	1/3 cup	13.5 lbs	spring through fall
Compost preparation	10-20 lbs/yd <sup>3</sup>			anytime of the year

Farming, Gardening & Home use Rates		Per Plant	LBS PER 1000 sq. ft.	WHEN TO FERTILIZE
Vegetables (all types)	1 1/2 oz/sq yard	2 tbs	14 to 20	spring through fall
Corn	450-715 lbs/acre	3/4 cup	10 to 16	prior to cultivation
Pulses, cereals	500-900 lbs/acre	1 tbs	11 to 20	prior to cultivation
Potatoes	900-1,400 lbs/acre	1/4 cups	20 to 32	prior to cultivation
Sugar beets	800-1,300 lbs/acre	2 tbs	18 to 30	prior to cultivation
Strawberries, Tomatoes	900-1,200 lbs/acre	2 tbs	20 to 28	late fall or spring
Vineyards	600-900 lbs/acre	3/4 cup	14 to 20	Feb.-April/Oct.-Dec.
Young fruit plantation	600-800 lbs/acre	1 cup	14 to 18	spring or fall
Fruit plantation	500-700 lbs/acre	3/4 cup	11 to 16	spring or fall
Berry shrubs	600-800 lbs/acre	1 1/2 cups	14 to 18	spring or fall
Meadows, Pastures	800-1,000 lbs/acre		11 to 16	spring or fall
<b>Forestry Use</b>				
Young forests, plants, trees	3 oz/plant	1/2 cup	14 to 20	spring
Tree nursery	1,000-1,400 lbs/acre	1/2 cup	23 to 32	before planting
Ornamental trees & shrubs	6 oz/square yard	1 cup	44 lbs	spring
Mature trees	1,800-2,250 lbs/acre	1 lb per 3 ft.	42 to 52	spring & fall
<b>Reclamation Use</b>				
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	year round, except over snow
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	year round, except over snow
Compost preparation	10-20 lbs/yd <sup>3</sup>			anytime of the year
<b>Turf Grass</b>				
Sports fields & Parks	1300 lbs/acre - for heavy traffic areas		30	spring and fall

### 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.

Manufactured for / Guaranteed By:

ROCKY MOUNTAIN BIO-PRODUCTS,  
A DIVISION OF BOWMAN CONSTRUCTION SUPPLY, INC.  
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\* Internet: [www.rockymtnbioproducts.com](http://www.rockymtnbioproducts.com)

NET WEIGHT DISTRIBUTOR:  
50 Lbs / 23 Kg

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