

# Opti-Gro Bio Stimulant Plus 2-15-15

A biostimulant that works through multiple active agents and multiple modes of action that stimulate the indigenous soil microbial to work more efficiently, thus improving the availability of soil nutrients.

## FEATURES AND BENEFITS

**Opti-Gro** contains a fish base nutrient package plus 4 other active agents.

**Brassinosteroids.** Called “a growth regulator of the 21st Century”, four of them have been isolated from **Opti-Gro**. They are homobrassinolide, dolicholide, homodolicholide, and brassinone. All are effective at extremely low concentrations.

They occur in **Opti-Gro** at about 0.03 mg/ml. At the standard 1 gallon/acre application rate, 30 mg/ha are applied, which is well within the accepted active range of 20 to 50 mg/ha. (see V.A. Khrpach, V. N. Zhabinskii, and A. E. de Groot, 1999, *Brassinosteroids, a New Class of Plant Hormone*, Academic Press, San Diego, California.) Effects on plants include:



- Greater seed Germination
- Increased crop yield
- Improved flowering
- Enhanced stress tolerance (temperature extremes, salinity drought, and pesticides)
- Increased leaf chlorophyll and photosynthesis

**Triacontanol.** This well-researched compound is found in relative abundance in **Opti-Gro**, at about 0.17 mg/ml. It can activate plant growth when applied at extremely low concentrations, less than 1 mg/ha. (See S.K. Ries, 1985, *Regulation of plant growth with triacontanol*, *CRC Critical Reviews in Plant Sciences*, Volume 2, Issue 1, CRC Press Inc. Boca Raton, Florida.)

Effects on plants include:

- Increased crop yield
- Improved seedling growth
- Increased chlorophyll and photosynthesis
- Enhanced dry matter accumulation

**Glycosides.** A major glycoside is in **Opti-Gro** which has been shown in greenhouse studies to consistently increase dry matter yields of crops when applied at very low levels.

**B Vitamins.** **Opti-Gro** contains about 0.45 mg/100g of Vitamin B1 (thiamin), 0.03 mg/100 g of Vitamin B2 (riboflavin), and 0.19 mg/100g of Vitamin B6 (pyridoxine). All these stimulate plant growth and development, which lead to higher yields.



**Opti-Gro** is most effective when mixed with other natural products such as fish, organic acids or plant nutrients.



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## DIRECTIONS FOR USE

Apply **Opti-Gro** by sprayer, or sprinkler or drip irrigation systems. Calibrate the system accurately.

### Field and orchard crops:

1. Test the soil if possible to determine deficiencies or imbalances. Correct mineral deficiencies, but treat nitrogen separately (see point 2).



2. Nitrogen fertilizer applications may be reduced to 50 to 80% of amounts required for an optimum yield potential. Consider soil organic matter, previous crop, degree of compaction, and soil level
3. Apply to the soil and/or foliage. In most cases use 1 gallon/acre per application for field crops. **Field crops:**



- short-cycle crops (<45 days): at planting and within 7 days. Medium-cycle crops (45 to 120 days): at planting and 60 (or at flowering or midseason), and 100 days.
4. Long Term Crops (pastures, hay, some vegetables greater than 120days) apply at spring green up and every 60 days during active growth. For hay at spring green up and after every cutting.