

Optimize® LV

Soybean

Retail Application Guide

What is Optimize® LV Inoculant?

Optimize LV is a retailer-applied inoculant for soybeans that supports your crop's potential by enhancing nutrient availability.

What makes Optimize LV unique? You get the benefits of a specially selected *Bradyrhizobium japonicum* inoculant, along with LCO (lipo-chitooligosaccharide) technology.

Directions for Use

Please read the label before application for complete use instructions.

- Shake well before use.
- Use before expiration date.
- Open package only when ready to use.
- Prepare only as much Optimize LV as will be applied that day.

Guaranteed Minimum Analysis

- 10 billion (1×10^{10}) *Bradyrhizobium japonicum* viable cells per gram.
- Product contains a minimum of $1 \times 10^{-7}\%$ lipo-chitooligosaccharide in an inoculant carrier.

Seed Treatment Recommendations

- For up-to-date information on seed treatment compatibility, refer to nexusbioag.com

Product Stability

- Unopened package: one-year as per the expiry date on package if continuously stored as per label directions.
- Opened unused package: 24 hours.

We do not recommend the use of additional water, polymers, or dyes beyond what is required with the seed treatment. Use non-chlorinated water if additional water is required with other seed treatments.

| Product | Fall Application | | Spring Application | |
|--|--|-----------------|--|-----------------|
| | To achieve up to 220 days on seed with seed treatments | | To achieve up to 150 days on seed with seed treatments | |
| | FL oz/100 lbs seed | ML/45.4 kg seed | FL oz/100 lbs seed | ML/45.4 kg seed |
| Optimize LV | 1.16 | 34.5 | 1.16 | 34.5 |
| Liquid additive (included with purchase of Optimize LV) | 0.34 | 10 | 0.34 | 10 |
| Liquid additive (additional extender purchased separately) | 0.34 | 10 | -- | -- |
| Total volume applied | 1.84 | 54.5 | 1.5 | 44.5 |

Please read the label before application for complete use instructions.

Fall Application

- Additional liquid additive (extender) required to achieve this number of days on seed must be purchased separately.

Directions for Application

- Ensure the treater has been properly calibrated.
- Pour contents of bladder into mix tank.
- Pour in liquid additive and additional liquid additive (extender).
- Agitate mixture (mixing does not need to be continuous)
- Apply at a rate of 1.84 fl oz per 100 lbs of seed.

| Optimize LV + additional liquid additive (extender) ¹ - Fall application | | |
|---|------------------------|--------------------------|
| Seed treatment | Sequential application | Simultaneous application |
| Acceleron® Seed Applied Solutions for soybeans (fungicides only)* | • | 220 days |
| Acceleron® Seed Applied Solutions for soybeans (fungicides and insecticide)* | • | 220 days |
| Apron XL® + Vibrance® Maxx RFC (premix) | • | 220 days |
| Apron XL® + Cruiser Maxx® Beans + Vibrance® 500 FS | • | 220 days |
| Clariva® pn + Vibrance® Maxx RFC (co-pack) | • | 220 days |
| Clariva® pn + Vibrance® Maxx RTA (co-pack) | • | 220 days |
| Cruiser Maxx® Vibrance® Beans | • | 220 days |
| EverGol® Energy ² | • | 220 days |
| EverGol® Energy ² + ILeVO® | 220 days | 220 days |
| EverGol® Energy ² + Stress Shield® 600 (208 ml high rate) | • | 220 days |
| Fortenza® | • | 220 days |
| Fortenza® + Acceleron® Seed Applied Solutions for soybeans (fungicides only)* | • | 220 days |
| Fortenza® + Cruiser Maxx® Beans + Vibrance® 500FS | • | 220 days |
| Fortenza® + Vibrance® Maxx RFC | • | 220 days |
| ILeVO® | 220 days | 220 days |
| Insure® Pulse | • | 60 days |
| Integral® | • | 220 days |
| Lumiderm® | 220 days | 220 days |
| Lumisena™ | 220 days | 220 days |
| Vibrance® Maxx RFC (co-pack) | • | 220 days |
| Vibrance® Maxx RTA (co-pack) | • | 220 days |

¹Additional liquid extender purchased separately.

²Tested with colourant and without PSF 1010.

Acceleron® Seed Applied Solutions for soybeans (fungicides only) is a combination of three separate individually registered products, which together contain the active ingredients fluxapyroxad, pyraclostrobin and metalaxyl. Acceleron® Seed Applied Solutions for soybeans (fungicides and insecticide) is a combination of four separate individually registered products, which together contain the active ingredients fluxapyroxad, pyraclostrobin, metalaxyl and imidacloprid.

Compatibility tests are conducted with registered seed treatments to ensure the viability of our inoculants is not compromised by pesticides and other seed treatments. Each inoculant formulation is tested with various seed treatments, using different application methods on specific crops. The planting windows presented are specific to Optimize LV only and should not be used for other inoculants. Recommendation of compatibility made on the basis of product formulation at the time of testing – user assumes all risk. The information provided herein is based on data we believe to be reliable. It is offered in good faith but without warranty as conditions and methods of use of the products are beyond our control. For the most up to date compatibility, contact Novozymes BioAg toll-free at 1-888-744-5662. Tank mixtures: The applicable labeling for each product must be in the possession of the user at the time of application. Follow applicable use instructions, including application rates, precautions and restrictions of each product used in the tank mixture. Always predetermine the compatibility of tank mixtures by mixing small proportional quantities in advance.

Spring Application

Directions for Application


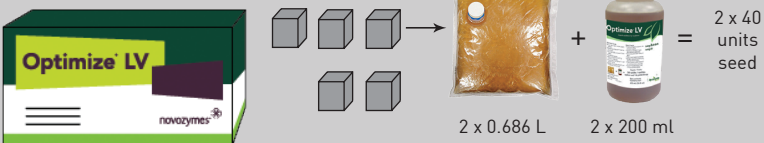
- Ensure that treater has been properly calibrated.
- Pour contents of bladder into mix tank.
- Pour in liquid additive.
- Agitate mixture (mixing does not need to be continuous).
- Apply at a rate of 1.5 fl oz per 100 lbs of seed.

| Optimize LV - Spring application | | |
|---|------------------------|--------------------------|
| Seed treatment | Sequential application | Simultaneous application |
| Acceleron® Seed Applied Solutions for soybeans (fungicides only)* | 120 days | 150 days |
| Acceleron® Seed Applied Solutions for soybeans (fungicides and insecticide)* | 120 days | 150 days |
| Clariva® pn + Vibrance® Maxx RFC (co-pack) | • | 120 days |
| Clariva® pn + Vibrance® Maxx RTA® (co-pack) | • | 120 days |
| Cruiser Maxx® Beans | 120 days | 120 days |
| Cruiser Maxx® Vibrance® Beans | 120 days | 150 days |
| Cruiser Maxx® Vibrance Beans + Mertect® SC + Clariva® pn | 120 days | 120 days |
| EverGol® Energy ² | 120 days | 120 days |
| EverGol® Energy ² + ILeVO® | 120 days | 90 days |
| EverGol® Energy ² + Stress Shield® 600 (104 ml low rate) | 120 days | 120 days |
| Fortenza® | • | 120 days |
| Fortenza® + Acceleron® Seed Applied Solutions for soybeans (fungicides only)* | • | 120 days |
| Fortenza® + Vibrance® Maxx RFC (premix) | • | 120 days |
| ILeVO® | 60 days | 60 days |
| Insure® Pulse | • | 30 days |
| Integral® | 90 days | 90 days |
| Lumiderm® | 120 days | 120 days |
| Lumisena™ | 120 days | 120 days |
| Vibrance® Maxx RFC (co-pack) | • | 120 days |
| Vibrance® Maxx RFC (co-pack) + Cruiser® SFS (50 ml) | 120 days | 120 days |
| Vibrance® Maxx RFC (premix) | 120 days | 120 days |
| Vibrance® Maxx RFC + Mertect® SC + Clariva® pn | 120 days | 120 days |
| Vibrance® Maxx RTA® (co-pack) | • | 120 days |

Best Practices for Treaters

- Optimize LV has a 24 hour in-tank label.
Best recommendation: rinse out and clean inoculant tanks at the end of each day.
This helps prevent contamination.
- If you have bulk seed tanks – run the fans.
Cold seed is very slow to absorb any treatment.
An increase of as little as 10°C can influence seed treatability. Condensation on the seed can reduce the quality of seed treatment adhesion.
- Use separate tanks. Apply insecticides/fungicides using a separate tank rather than tank mixing with Optimize LV. This allows you to customize treatment options, and extends the time Optimize LV can be in the tank. Remember, DO NOT use chlorinated water in combination with Optimize LV.
- Level your treater. By leveling the treater, you reduce the seed flow through the treating system. This improves both coating and drying.
- Allow treated seed to dry before transport.
- Beware of rapid drying and exposure to sunlight and heat. Rapid-drying agents can kill the rhizobia if applied before the seed has an opportunity to dry naturally. This can significantly reduce rhizobia counts per seed. Exposing treated seed in hard-side boxes to heat or direct sunlight can also reduce rhizobia counts.
- Check calibration often, at least bi-weekly. Calibration can be affected by changes in seed size, temperature, and humidity. Even in the presence of a seed wheel and flow meter, the calibration on the inoculant flow can vary throughout the season.
- Replace the peristaltic pump hose at the beginning of the season. Leave the pressure on the pump hose once you have calibrated to ensure that you have a consistent flow and are in the same spot on the hose.

Package Details

| Smallest treatment quantity | Configuration | Case treats | Cases per pallet |
|-----------------------------|--|-------------|------------------|
| 400 units | <p>1 x 400 unit case</p>  <p>6.9 L (233 fl oz) + 2.0 L (67 fl oz)</p> | 400 units | 30 |
| 40 units | <p>5 x 80 unit cartons/case</p>  <p>2 x 0.686 L + 2 x 200 ml = 2 x 40 units seed</p> | 400 units | 30 |

Optimize LV Calibration Chart

Grain Flow Rate:

Rate is in units*/hour, units/minute, lb/second, and kg/second

*One unit = 50 lb

Optimize LV Rate:

Rate is 44.5 ml/45.4 kg
or 1.5 fl oz/100 lb

Optimize LV + Additional Liquid Additive (Extender) Rate:

Rate is 54.5 ml/45.4 kg
or 1.84 fl oz/100 lb

| Units/hr | Units/min | lb/sec | kg/sec | ml/hr | ml/min | ml/sec | ml/hr | ml/min | ml/sec |
|----------|-----------|--------|--------|---------|---------|--------|---------|---------|--------|
| 600 | 10.0 | 8.3 | 3.8 | 24,842 | 414.0 | 7 | 30,520 | 508.7 | 8 |
| 700 | 11.7 | 9.7 | 4.4 | 28,982 | 483.0 | 8 | 35,607 | 593.4 | 10 |
| 800 | 13.3 | 11.1 | 5.0 | 33,122 | 552.0 | 9 | 40,693 | 678.2 | 11 |
| 900 | 15.0 | 12.5 | 5.7 | 37,263 | 621.0 | 10 | 45,780 | 763.0 | 13 |
| 1,000 | 16.7 | 13.9 | 6.3 | 41,403 | 690.1 | 12 | 50,867 | 847.8 | 14 |
| 1,100 | 18.3 | 15.3 | 6.9 | 45,543 | 759.1 | 13 | 55,953 | 932.6 | 16 |
| 1,200 | 20.0 | 16.7 | 7.6 | 49,683 | 828.1 | 14 | 61,040 | 1,017.3 | 17 |
| 1,300 | 21.7 | 18.1 | 8.2 | 53,824 | 897.1 | 15 | 66,126 | 1,102.1 | 18 |
| 1,400 | 23.3 | 19.4 | 8.8 | 57,964 | 966.1 | 16 | 71,213 | 1,186.9 | 20 |
| 1,500 | 25.0 | 20.8 | 9.4 | 62,104 | 1,035.1 | 17 | 76,300 | 1,271.7 | 21 |
| 1,600 | 26.7 | 22.2 | 10.1 | 66,245 | 1,104.1 | 18 | 81,386 | 1,356.4 | 23 |
| 1,700 | 28.3 | 23.6 | 10.7 | 70,385 | 1,173.1 | 20 | 86,473 | 1,441.2 | 24 |
| 1,800 | 30.0 | 25.0 | 11.3 | 74,525 | 1,242.1 | 21 | 91,560 | 1,526.0 | 25 |
| 1,900 | 31.7 | 26.4 | 12.0 | 78,666 | 1,311.1 | 22 | 96,646 | 1,610.8 | 27 |
| 2,000 | 33.3 | 27.8 | 12.6 | 82,806 | 1,380.1 | 23 | 101,733 | 1,695.6 | 28 |
| 2,100 | 35.0 | 29.2 | 13.2 | 86,946 | 1,449.1 | 24 | 106,820 | 1,780.3 | 30 |
| 2,200 | 36.7 | 30.6 | 13.9 | 91,086 | 1,518.1 | 25 | 111,906 | 1,865.1 | 31 |
| 2,300 | 38.3 | 31.9 | 14.5 | 95,227 | 1,587.1 | 26 | 116,993 | 1,949.9 | 32 |
| 2,400 | 40.0 | 33.3 | 15.1 | 99,367 | 1,656.1 | 28 | 122,080 | 2,034.7 | 34 |
| 2,500 | 41.7 | 34.7 | 15.7 | 103,507 | 1,725.1 | 29 | 127,166 | 2,119.4 | 35 |
| 2,600 | 43.3 | 36.1 | 16.4 | 107,648 | 1,794.1 | 30 | 132,253 | 2,204.2 | 37 |
| 2,700 | 45.0 | 37.5 | 17.0 | 111,788 | 1,863.1 | 31 | 137,340 | 2,289.0 | 38 |
| 2,800 | 46.7 | 38.9 | 17.6 | 115,928 | 1,932.1 | 32 | 142,426 | 2,373.8 | 40 |
| 2,900 | 48.3 | 40.3 | 18.3 | 120,068 | 2,001.1 | 33 | 147,513 | 2,458.5 | 41 |
| 3,000 | 50.0 | 41.7 | 18.9 | 124,209 | 2,070.1 | 35 | 152,600 | 2,543.3 | 42 |

If you would like more information or have questions, contact your local NexusBioAg Representative or visit nexusbioag.com

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