

Optimize[®] ST

SOYBEAN

RETAIL APPLICATION GUIDE

What is Optimize ST?

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

What makes Optimize ST unique? You get the benefits of a specially selected *Bradyrhizobium japonicum* inoculant, along with LCO (lipochitooligosaccharide) 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 ST as will be applied that day

Guaranteed minimum analysis

- 5 billion (5×10^9) *Bradyrhizobium japonicum* viable cells per gram
- Product contains a minimum of $2 \times 10^{-7}\%$ lipochitooligosaccharide in an inoculant carrier

Seed treatment recommendations

- For up-to-date information on seed treatment compatibility, refer to useOptimizeST.ca

Product stability

- Unopened package: two years as per the expiry date on package
- 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	Spring Application	Fall Application
	To achieve up to 150 days on seed	To achieve up to 220 days on seed
Optimize ST	FL oz/100 lbs seed 2.16	FL oz/100 lbs seed 2.16
Liquid additive (included with purchase of Optimize ST)	0.64	0.64
Liquid additive (additional extender purchased separately)	—	0.64
Total volume applied	2.80	3.44

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 that treater has been properly calibrated
- Pour contents of bladder into mix tank - 2.16 fl. oz.
- Pour in liquid additive and additional liquid additive (extender) - total 1.28 fl. oz.
- Agitate mixture (mixing does not need to be continuous)
- Apply at a rate of 3.44 fl oz per 100 lbs of seed

SPRING APPLICATION

Directions for application

- Ensure that treater has been properly calibrated
- Pour contents of bladder into mix tank (2.16 fl. oz.)
- Pour in liquid additive (0.64 fl. oz.)
- Agitate mixture (mixing does not need to be continuous)
- Apply at a rate of 2.8 fl oz per 100 lbs of seed

Optimize ST + additional liquid additive (extender) - Fall application

Seed treatment	Planting Window	
	Sequential application	Simultaneous application*
Acceleron® seed applied solutions for soybeans (fungicides only)**	120 days	220 days
Acceleron® seed applied solutions for soybeans (fungicides and insecticide)**	120 days	220 days
Cruiser Maxx® Vibrance® Beans	120 days	220 days

Optimize ST - Spring application

Seed treatment	Planting Window	
	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
Cruiser Maxx® Vibrance® Beans	120 days	150 days
EverGo!® Energy	120 days	120 days
EverGo!® Energy + Stress Shield® 600 (104 ml low rate)	120 days	120 days
Inovate®	Not Tested	120 days
Integral®	90 days	90 days

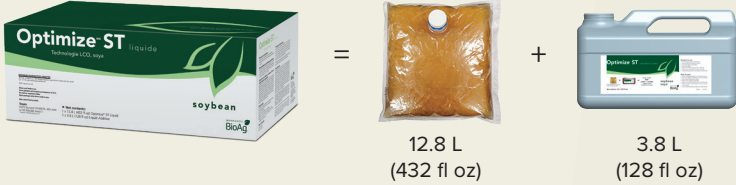
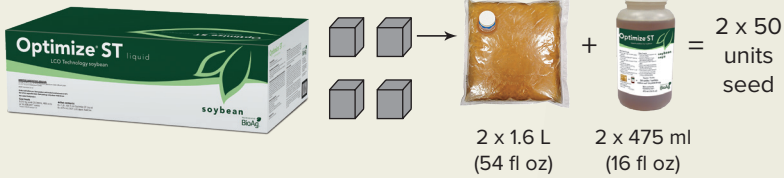
**Acceleron® seed applied solutions for soybeans (fungicides and insecticide) is a combination of four separate individually registered products, which together contain the active ingredients fluxapyroxad, pyraclostrobin, metalaxyl and imidacloprid. Acceleron® seed applied solutions for soybeans (fungicides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

Recommendation of compatibility made on the basis of product formulation at 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. Furthermore, laws, regulations and/or third party rights may prevent the recipient from using the information herein in a given manner. Thus, the information herein is provided “as is” and Monsanto makes no representation or warranty whatsoever with regard to said information, including the accuracy, fitness for a particular purpose, non-infringement of intellectual property rights or regulatory/legal compliance, unless otherwise agreed to in writing. For the most up to date compatibility, please refer to useOptimizeST.ca

BEST PRACTICES FOR TREATERS

- Optimize® ST 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 ST. This allows you to customize treatment options, and extends the time Optimize ST can be in the tank. Remember, DO NOT use chlorinated water in combination with Optimize ST.
- 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>12.8 L (432 fl oz) + 3.8 L (128 fl oz)</p>	400 units	24
100 units	<p>4 cartons x 100 unit case</p>  <p>2 x 1.6 L (54 fl oz) + 2 x 475 ml (16 fl oz) = 2 x 50 units seed</p>	400 units	24

OPTIMIZE® ST CALIBRATION CHART

Grain flow rate:

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

*One unit = 50 lb

Optimize® ST rate:

Rate is 82.8 ml/45.4 kg or 2.8 fl oz/100 lb

Optimize® ST + Additional liquid additive (extender) rate:

Rate is 101.7 ml/45.4 kg or 3.44 fl oz/100 lb

Units/hr	Units/min	lb/sec	kg/sec
600	10.0	8.3	3.8
700	11.7	9.7	4.4
800	13.3	11.1	5.0
900	15.0	12.5	5.7
1,000	16.7	13.9	6.3
1,100	18.3	15.3	6.9
1,200	20.0	16.7	7.6
1,300	21.7	18.1	8.2
1,400	23.3	19.4	8.8
1,500	25.0	20.8	9.4
1,600	26.7	22.2	10.1
1,700	28.3	23.6	10.7
1,800	30.0	25.0	11.3
1,900	31.7	26.4	12.0
2,000	33.3	27.8	12.6
2,100	35.0	29.2	13.2
2,200	36.7	30.6	13.9
2,300	38.3	31.9	14.5
2,400	40.0	33.3	15.1
2,500	41.7	34.7	15.7
2,600	43.3	36.1	16.4
2,700	45.0	37.5	17.0
2,800	46.7	38.9	17.6
2,900	48.3	40.3	18.3
3,000	50.0	41.7	18.9

ml/hr	ml/min	ml/sec
24,842	414.0	7
28,982	483.0	8
33,122	552.0	9
37,263	621.0	10
41,403	690.1	12
45,543	759.1	13
49,683	828.1	14
53,824	897.1	15
57,964	966.1	16
62,104	1,035.1	17
66,245	1,104.1	18
70,385	1,173.1	20
74,525	1,242.1	21
78,666	1,311.1	22
82,806	1,380.1	23
86,946	1,449.1	24
91,086	1,518.1	25
95,227	1,587.1	26
99,367	1,656.1	28
103,507	1,725.1	29
107,648	1,794.1	30
111,788	1,863.1	31
115,928	1,932.1	32
120,068	2,001.1	33
124,209	2,070.1	35

ml/hr	ml/min	ml/sec
30,520	508.7	8
35,607	593.4	10
40,693	678.2	11
45,780	763.0	13
50,867	847.8	14
55,953	932.6	16
61,040	1,017.3	17
66,126	1,102.1	18
71,213	1,186.9	20
76,300	1,271.7	21
81,386	1,356.4	23
86,473	1,441.2	24
91,560	1,526.0	25
96,646	1,610.8	27
101,733	1,695.6	28
106,820	1,780.3	30
111,906	1,865.1	31
116,993	1,949.9	32
122,080	2,034.7	34
127,166	2,119.4	35
132,253	2,204.2	37
137,340	2,289.0	38
142,426	2,373.8	40
147,513	2,458.5	41
152,600	2,543.3	42



If you need more information or have questions about Optimize ST, contact Monsanto BioAg toll-free at **1-800-667-4944** or visit **Monsantobioag.ca**.

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