

BOSTM

DUAL STRAIN INOCULANT LINE

GRANULAR | STERILE PEAT | LIQUID

BOS™ LINE

DUAL STRAIN INOCULANTS



BUILD STRONGER PEAS, LENTILS, AND OTHER LEGUMES FROM START TO FINISH.



The BOS™ Line of dual strain inoculants contain unique bioactives that go well beyond your typical product to maximize yield potential from start to finish. It begins with the dual strains of a crop-specific *Rhizobium* and an exclusive *Pseudomonas* soil microbe for multiple yield-boosting benefits. All of the microbial strains used in BOS inoculants are native to North American soils.



Our Inoculant Line is activated by our exclusive Bioactive Organic Soil-Microbes™ Technology. BOS™ inoculants enhance nitrogen fixation, phosphate solubilization, micronutrient availability and crop-stress tolerance, maximizing yield potential.

Benefits:

- MORE Rhizobia to increase nitrogen fixation
- Improved micronutrient availability and uptake
- Greater phosphate and silicon solubilization
- Reduced yield loss from crop stress
- Production of crop-growth promoting compounds



*BOS Inoculants have up to 150% more CFU/g than competitor brands.





GET THE *PSEUDOMONAS*-BONUS.

Why stop at nitrogen fixation when you can get the dual strain benefit of *Rhizobium* and *Pseudomonas*? *Pseudomonas* is our proprietary beneficial biological included in all BOS inoculants. This is a unique plant growth promoting bacteria that provides several additional benefits to your legumes.

BENEFITS	<i>PSEUDOMONAS</i>	<i>RHIZOBIUM</i>
Increases nitrogen fixation		✓
Promotes seeding growth	✓	✓
Reduces ethylene production / Promotes tolerance to environmental stress	✓	
Production of crop-growth promoting compounds	✓	
Facilitates mycorrhizal fungi symbiosis	✓	
Solubilization of cations	✓	
Greater phosphate and silicon solubilization	✓	

BOS Inoculant Formulations

CROP	GRANULAR	STERILE SELF-ADHERING (SA) PEAT ¹	LIQUID
Pea, Lentil, and Faba Bean	✓	✓	✓
Soybean	✓	✓	Fall 2025**
Dry Bean		✓	



Only Granular and Self-Adhering Peat are available in Organic.

*BOS Inoculants have up to 150% more CFU/g than competitor brands.
 **Pending registration

¹Our sterile SA peat and liquid inoculants are compatible with the majority of seed treatments available on the market. Please speak to your NutriAg representative for more information.

GRANULAR

BIOACTIVES

Rhizobium leguminosarum
Pseudomonas sp.

Available in Organic.



Analysis

2 x 10⁸ CFU/g of *Rhizobium leguminosarum* biovar *viciae*
 and 1 x 10⁴ CFU/g of *Pseudomonas sp.*

Package size

12.25 kg bag and 196 kg mini bulk

Directions for Use

Apply with the seed in the seed row using a granular tank. Calibrate equipment to deliver the correct amount of granular inoculant as per the table below. Apply in-furrow, not banded. Do not mix granular inoculant with pesticides or fertilizers. In humid conditions, carefully monitor flow and reduce the weight of granular inoculant per tank. Do not apply at a depth that is less than the planting depth of the seed. Do not leave granular inoculant in a hopper overnight.

APPLICATION RATE

ROW SPACING		APPLICATION RATE		AREA TREATED BAG (12.25 KG)		AREA TREATED MINI BULK (196 KG)	
CM	INCHES	KG/HA	LBS/AC	HA	AC	HA	AC
15.2	6	6.2	5.5	2.0	4.9	31.6	78.6
19.1	7.5	4.9	4.4	2.5	6.1	40.0	98.2
22.9	9	4.0	3.6	3.1	7.5	49.0	120.0
25.4	10	3.7	3.3	3.3	8.2	53.0	130.9
30.5	12	3.0	2.7	4.1	10.0	65.3	160.0
38.1	15	2.5	2.2	4.9	12.3	78.4	196.4
50.8	20	1.8	1.6	6.7	16.9	107.8	270.1
53.3	21	1.7	1.5	7.1	18.0	113.3	288.1
55.9	22	1.6	1.4	7.7	19.3	122.5	308.6
61.0	24	1.4	1.3	8.8	20.8	140.0	332.4
76.2	30	1.2	1.1	10.2	24.6	163.3	392.8
91.4	36	1.0	0.9	12.3	30.0	196.0	480.1

Additional information

- Ensure equipment is free of chemical residue, fertilizer, and debris.
- If using an auger, use at a slow speed to avoid damaging granular inoculant.
- Calibrate equipment before adding full amount of inoculant.
- Bulk Density Average 42.9lbs/Cubic Foot.



PEA, LENTIL, & FABA BEAN INOCULANT

STERILE SELF-ADHERING PEAT

BIOACTIVES

Rhizobium leguminosarum
Pseudomonas sp.

Available in Organic.



Analysis

9 x 10⁸ CFU/g of *Rhizobium leguminosarum* biovar *viciae* and 1 x 10⁴ CFU/g of *Pseudomonas sp.*

Package size

5 x 1.5 kg bags/box

Directions for Use

BOS peat is self-adhering so there is no need for the addition of a sticker. Please read the label before application for complete instructions.

APPLICATION RATE

CROP	ONE 1.5 KG (3.3 LBS) BAG TREATS		
	KG	LBS	BU
Pea	900	1980	33
Lentil	562	1240	21
Faba Bean	900	1980	33

APPLICATION METHOD

Dry Inoculation: Pour inoculant onto thin layers of seed and mix thoroughly to evenly coat all seeds.

Damp Inoculation: Wet seeds with sufficient water (approximately 300 ml/150 kg (10 oz/330 lbs) of seed). Thoroughly mix the inoculant with the damp seeds and ensure that all seeds are coated evenly.

Slurry: Pre-mix inoculant with sufficient amounts of non-chlorinated water, approximately 1 L/1.5 kg bag, then apply to seeds.

Additional Information

- Seed requires re-inoculation if not used within 24 hours.
- Compatible with the majority of seed treatments available on the market.
- Consult with your NutriAg representative for more information.



PEA, LENTIL, & FABBA BEAN INOCULANT

LIQUID

BIOACTIVES

Rhizobium leguminosarum
Pseudomonas sp.

Not Available in Organic.



Analysis

1 x 10⁹ CFU/ml of *Rhizobium leguminosarum* biovar *viciae* and 1 x 10⁶ CFU/ml of *Pseudomonas sp.*

Directions for use on seed

Shake well before use to achieve uniform suspension. Protect inoculated seed from sunlight and drying winds. For best results, plant inoculated seed as soon as possible. Inoculated seeds should go into the ground within 48 hours. Increased volumes of inoculant per bushel of seed may be advantageous. Before using the product, read instructions and follow the label carefully.

Directions for use in furrow

Shake well before using to ensure an even suspension. Ensure a clean liquid delivery system is used to apply BOS™ Pea, Lentil, & Faba Bean liquid inoculant. Remove spray tips and replace with appropriate flow regulator orifice disc and direct the solid stream behind the seed planting assembly in the furrow. Do not apply banded to the side, below, or above the seed.

APPLICATION RATE

On Seed: 2.5 fl oz per 60 lbs of seed (75 mL per 27.2 kg of seed)

In furrow: 250 mL/ac or 618 mL/ha (at 12 inch or 30 cm row spacing); dilute with dechlorinated water for better distribution (e.g., use 3 - 20 gal/ac dechlorinated water as a carrier).

Calibrate equipment to apply the total volume of liquid BOS and carrier per acre.

ROW SPACING		BOS RATE		3.0 L UNIT TREATS
CM	INCHES	ML/AC	ML/HA	(IN FURROW)
25	10	300	741	10 acres/4.0 ha
30	12	250	618	12 acres/4.9 ha

Additional Information

- Compatible with the majority of seed treatments available on the market.
- Consult with your NutriAg representative for more information.

GRANULAR

BIOACTIVES

Bradyrhizobium japonicum
Pseudomonas sp.

Available in Organic.



Analysis

2×10^8 CFU/g of *Bradyrhizobium japonicum* and 1×10^4 CFU/g of *Pseudomonas sp.*

Package size

12.25 kg bag and 196 kg mini bulk

Directions for Use

Apply with the seed in the seed row using a granular tank. Calibrate equipment to deliver the correct amount of granular inoculant as per the table below. Apply in-furrow, not banded. Do not mix granular inoculant with pesticides or fertilizers. In humid conditions, carefully monitor flow and reduce the weight of granular inoculant per tank. Do not apply at a depth that is less than the planting depth of the seed. Do not leave granular inoculant in a hopper overnight.

APPLICATION RATE

ROW SPACING		APPLICATION RATE		AREA TREATED BAG (12.25 KG)		AREA TREATED MINI BULK (196 KG)	
CM	INCHES	KG/HA	LBS/AC	HA	AC	HA	AC
15.2	6	6.2	5.5	2.0	4.9	31.6	78.6
19.1	7.5	4.9	4.4	2.5	6.1	40.0	98.2
22.9	9	4.0	3.6	3.1	7.5	49.0	120.0
25.4	10	3.7	3.3	3.3	8.2	53.0	130.9
30.5	12	3.0	2.7	4.1	10.0	65.3	160.0
38.1	15	2.5	2.2	4.9	12.3	78.4	196.4
50.8	20	1.8	1.6	6.7	16.9	107.8	270.1
53.3	21	1.7	1.5	7.1	18.0	113.3	288.1
55.9	22	1.6	1.4	7.7	19.3	122.5	308.6
61.0	24	1.4	1.3	8.8	20.8	140.0	332.4
76.2	30	1.2	1.1	10.2	24.6	163.3	392.8
91.4	36	1.0	0.9	12.3	30.0	196.0	480.1

Additional information

- Ensure equipment is free of chemical residue, fertilizer, and debris.
- If using an auger, use at a slow speed to avoid damaging granular inoculant.
- Calibrate equipment before adding full amount of inoculant.
- Bulk Density Average 42.9lbs/Cubic Foot.

STERILE SELF-ADHERING PEAT

BIOACTIVES

Bradyrhizobium japonicum
Pseudomonas sp.

Available in Organic.



Analysis

2 x 10⁹ CFU/g of *Bradyrhizobium japonicum* and 5 x 10⁸ CFU/g of *Pseudomonas* sp.

Package size

5 x 1.5 kg bags/box

Directions for Use

BOS peat is self-adhering so there is no need for the addition of a sticker. Please read the label before application for complete instructions.

APPLICATION RATE

Apply 500 g per 150 kg of seed. 1 bag (1.5 kg) of inoculant treats 450 kg (992 lbs) of seed.

RATE	ONE 1.5 KG (3.3 LBS) BAG TREATS			
	KG	LBS	BU	UNITS
Full Rate	450	990	16.5	20
Reduced Rate	900	1980	33	40

APPLICATION METHOD

Dry Inoculation: Pour inoculant onto thin layers of seed and mix thoroughly to evenly coat all seeds.

Damp Inoculation: Wet seeds with sufficient water (approximately 300 ml/150 kg (10 oz/330 lbs) of seed). Thoroughly mix the inoculant with the damp seeds and ensure that all seeds are coated evenly.

Slurry: Pre-mix inoculant with sufficient amounts of non-chlorinated water, approximately 1 L/1.5 kg bag, then apply to seeds.

Additional Information

- Seed requires re-inoculation if not used within 24 hours.
- Compatible with the majority of seed treatments available on the market. Consult with your NutriAg representative for more information.



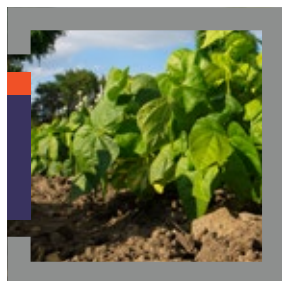
DRY BEAN INOCULANT

STERILE SELF-ADHERING PEAT

BIOACTIVES

Rhizobium leguminosarum
Pseudomonas sp.

Available in Organic.



Analysis

8 x 10⁸ CFU/g of *Rhizobium leguminosarum* biovar *phaseoli* and 1 x 10⁵ CFU/g of *Pseudomonas sp.*

Package size

5 x 1.5 kg bags/box

Crops

For inoculation of *Phaseolus vulgaris* (black beans, navy beans, great northern beans, snap beans, scarlet runner beans, wax beans, pinto beans, pink beans, kidney beans, garden or string beans, field or canning beans, and cranberry beans).

Directions for Use

BOS peat is self-adhering so there is no need for the addition of a sticker. Please read the label before application for complete instructions.

APPLICATION RATE

RATE	ONE 1.5 KG (3.3 LBS) BAG TREATS			
	KG	LB	BU	UNITS
Full Rate	450	990	16.5	20
Reduced Rate	900	1980	33	40

APPLICATION METHOD

Dry Inoculation: Pour inoculant onto thin layers of seed and mix thoroughly to evenly coat all seeds.

Damp Inoculation: Wet seeds with sufficient water (approximately 300 ml/150 kg (10 oz/330 lbs) of seed). Thoroughly mix the inoculant with the damp seeds and ensure that all seeds are coated evenly.

Slurry: Pre-mix inoculant with sufficient amounts of non-chlorinated water, approximately 1 L/1.5 kg bag, then apply to seeds.

Additional Information

- Seed requires re-inoculation if not used within 24 hours.
- Compatible with the majority of seed treatments available on the market. Consult with your NutriAg representative for more information.

Data from the field:

Crop: Red Lentil (Impulse)

Year: 2020

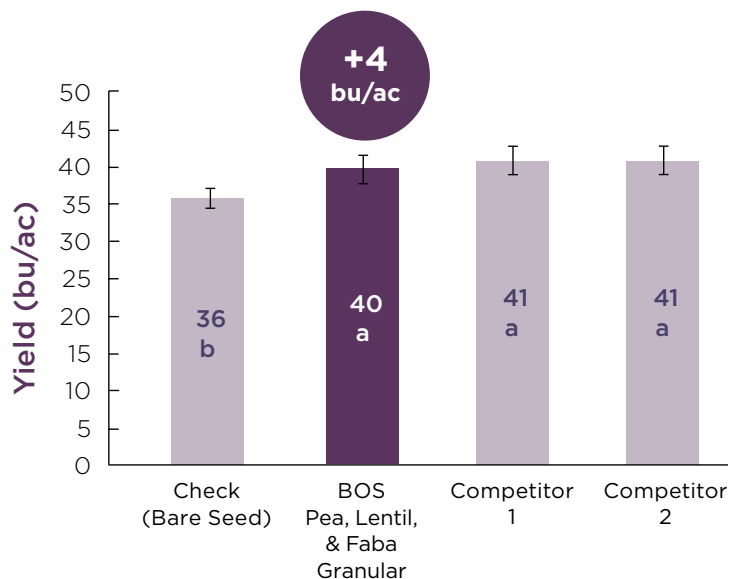
Location: Vulcan, AB

Cooperator: Small Plot

Design: RCBD, 4 reps

Method: Bare seed and no inoculant (check) was compared to plots treated with different dual strain granular inoculants, including BOS.

Result: The *Rhizobium* and *Pseudomonas* sp. in BOS Pea, Lentil, & Faba Bean Granular improved yield over the uninoculated check by 4 bu/ac, and resulted in statistically identical responses to the other dual strain competitor products.



Crop: Pea (CDC Canary)

Year: 2023

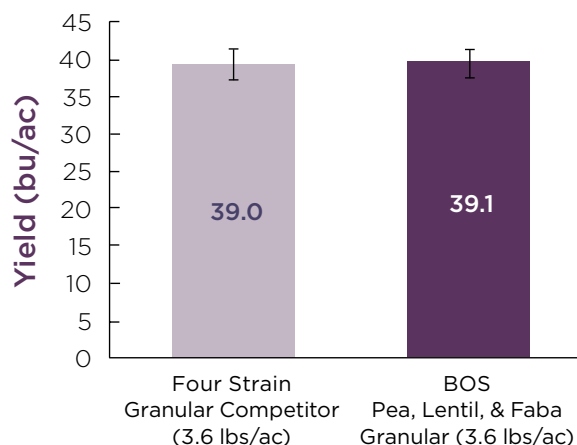
Location: St. Brieux, SK

Cooperator: SMAg Research

Design: RCBD, 6 reps

Method: A pea trial was performed to compare the dual strain BOS Pea, Lentil, & Faba Bean Granular inoculant with a competitor granular inoculant containing four different microbes.

Result: The *Rhizobium* and *Pseudomonas* sp. in BOS Pea, Lentil, & Faba Bean Granular delivered a statistically even response to the four strain competitor product.



Crop: Pea (CDC Canary)

Year: 2023

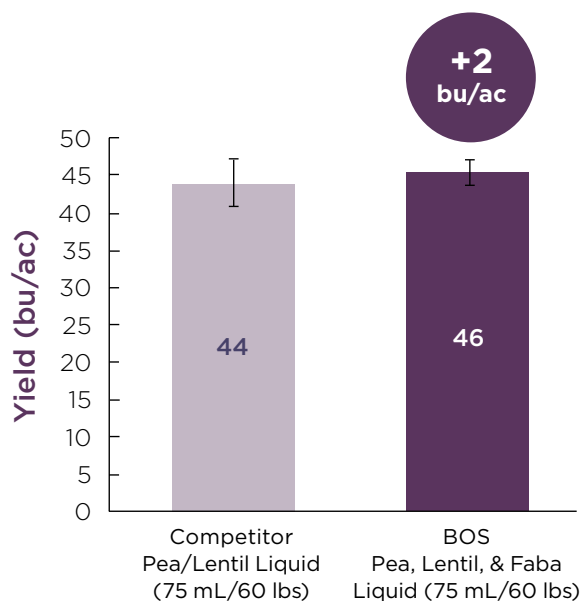
Location: St. Brieux, SK

Cooperator: SMAg Research

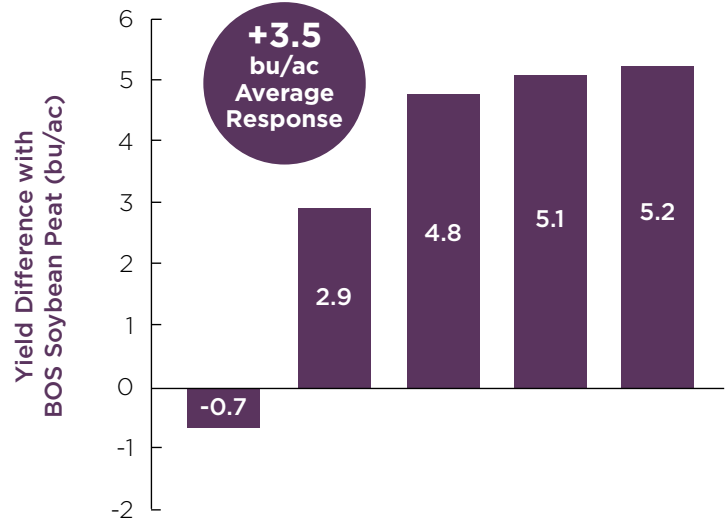
Design: RCBD, 6 reps

Method: Pea seed was treated with a dual strain competitor liquid inoculant or with BOS Pea, Lentil, & Faba Bean Liquid inoculant.

Result: The strains in BOS Pea, Lentil, & Faba Bean Liquid delivered a statistically even and numerically higher response compared to the competitor product.



Crop: Soybean
Years: 2017-2021
Location: 5 Trials across Canada
Design: Split & RCBD
Method: Grower standard practice was compared to treatment with BOS Soybean Peat applied at the standard rate of 1.5 kg BOS/450 kg seed.
Result: 80% Positive responses, with an average increase of 3.5 bu/ac



Seed Treatment and BOS™ Pea, Lentil, & Faba Bean Compatibility

Product	Seed Treatment	Tank Mix	Wet Sequential	Dry Sequential
BOS Pea, Lentil, & Faba Bean Powder	Vibrance® Maxx RFC	5 hours	24 hours	24 hours
	Insure® Pulse	Not recommended	5 hours	5 hours
	Rancona® Trio	Not recommended*	24 hours*	24 hours*
	Zeltera®	Not recommended	24 hours	48 hours
BOS Pea, Lentil, & Faba Bean Liquid	Vibrance® Maxx RFC	Not recommended	5 hours	5 hours
	Insure® Pulse	Not recommended	Not recommended	Not recommended
	Rancona® Trio	Not recommended	2 hours	5 hours
	Zeltera®	Not recommended	5 hours*	5 hours*

Seeds were treated with chemical products at rates according to manufacturer's recommendation and were stored at 5°C, unless stated otherwise.

* Tested at room temperature



DON'T FORGET, INOCULANTS ARE LIVING ORGANISMS AND NEED TO BE STORED CAREFULLY AND PROPERLY.

- Keep out of direct sunlight
- Store in a cool, dry, and well-ventilated area
- Avoid freezing



To learn more about NutriAg products and technologies contact us at **416.636.1555**, or visit **nutriag.com**

