

Novozymes JumpStart®

Canola | Corn | Lentil | Pea | Soybean | Wheat

Phosphate fertilizer use efficiency

Up to 90% of applied phosphate fertilizer goes unused in the year of application as it gets tied (bound) to soil particles and other elements, making it unavailable to the crop. Some of this is used over subsequent years, but at least 25% never becomes available.¹ It is crucial to make the most efficient use of fertilizer phosphate to maximize yield potential.

Factors affecting phosphate availability²

Phosphate is less available:

- In soils containing high levels of cations, such as calcium, magnesium, iron or aluminum
- In soils with high clay content
- At colder soil temperatures
- In dry soils
- To crops with a tap root system

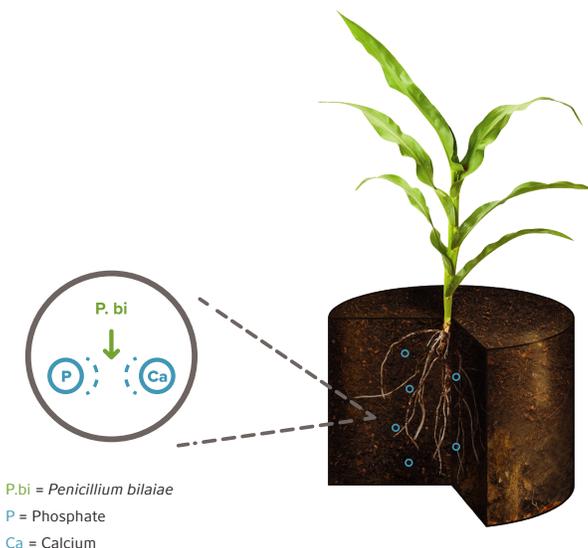
How JumpStart® inoculant works

JumpStart® inoculant contains the naturally occurring soil fungus *Penicillium bilaiae*, which grows along plant roots, releasing phosphate bound in the soil, making it more readily available for the crop to use.

Penicillium bilaiae, the active ingredient in JumpStart®, does not eliminate the need for phosphate fertilizer, but provides crops access to more phosphate for higher yield potential.

Freeing phosphate

Penicillium bilaiae releases bound mineral forms of soil and fertilizer phosphate, making it more readily available for the plant to use.



JumpStart® application

JumpStart® is not crop specific. JumpStart® colonizes (grows along) the root system rather than infecting the root, so you do not have to purchase a specific type of JumpStart® for a specific crop.

JumpStart® can be applied on-farm up to 30 days prior to seeding (depending on seed type) and can be used with many different seed treatments.

Please read the label before application for complete use instructions.

JumpStart® wettable powder application rates

JumpStart® is available as a wettable powder that is mixed into water and applied to the seed as a liquid. Once JumpStart® is mixed into water, apply to seed within 24 hours.

Crop	400 g container		Water (litres)	80 g container		Water (litres)
	Seed treated/container	Water (litres)		Seed treated/container	Water (litres)	
Alfalfa/sweetclover	n/a	1,100 lb	10	n/a	220 lb	2
Canola/mustard	n/a	1,000 lb	10	n/a	200 lb	2
Chickpea	400 bu	24,000 lb	30	80 bu	4,800 lb	6
Corn	70 bags* (5,600,000 kernels)		19.60	14 bags* (1,120,000 kernels)		3.92
Dry bean	300 bu	18,000 lb	25	60 bu	3,600 lb	5
Lentil	300 bu	18,000 lb	25	60 bu	3,600 lb	5
Pea	500 bu	30,000 lb	40	100 bu	6,000 lb	8
Soybean	300 bu	18,000 lb	25	60 bu	3,600 lb	5
Wheat	300 bu	18,000 lb	50	60 bu	3,600 lb	10

Crop	57 g (2.0 oz) container		Approximate water volume	Water (litres)
	Seed treated/container	Water (litres)		
Soybean	50 units or 2,500 lb, 42 bu	1,135 kg	3.9 US quarts	3.5

JumpStart® granular application rates

JumpStart® is available in a granular formulation for canola, barley, flax, mustard, oat, pea, lentil, soybean, canary seed and wheat. Application rates will vary according to row spacing; please refer to the table below for details.

18 kg bag		
Row spacing	Application rates	Area treated per bag
6 in	5.5 lb/ac	7.2 ac
8 in	4.1 lb/ac	9.7 ac
9 in	3.6 lb/ac	11.0 ac
10 in	3.3 lb/ac	12.0 ac
12 in	2.7 lb/ac	14.7 ac

Benefits of JumpStart®

- Improved phosphate availability
- Active in cool soil temps helping to enhance early-season vigour
- Earlier, more uniform maturity
- JumpStart® results are greatest in soils with lower levels of available phosphate and high to medium levels of bound/unavailable phosphate.
- JumpStart® works at low soil temperatures when phosphate availability is normally limited.
- JumpStart® can work in soils within a wide pH range. It is the level of available phosphate, not the pH, that determines the benefit of JumpStart®.

¹ Source: Better Crops Vol. 86 (2002, No. 4), International Plant Nutrition Institute (formerly: Potash and Phosphate Institute).

² Source: Phosphorus for Agriculture, International Plant Nutrition (formerly: Potash and Phosphate Institute).

To learn more visit us at Novozymes.com/bioag or call your Nexus BioAg sales representative.

About Novozymes

Novozymes is the world leader in biological solutions. Together with customers, partners and the global community, we improve industrial performance while preserving the planet's resources and helping build better lives. As the world's largest provider of enzyme and microbial technologies, our bioinnovation enables higher agricultural yields, low-temperature washing, energy-efficient production, renewable fuel and many other benefits that we rely on today and in the future. We call it Rethink Tomorrow.

Novozymes BioAg Limited

3935 Thatcher Avenue
SK S7R 1A3 Saskatoon
Canada

Tel. 1 888 744 5662