

# LALFIX<sup>®</sup> START

## SPHERICAL PULSES



SPHERICAL  
GRANULES



PULSES



INOCULANT

### Multi-Crop Premium Spherical Granule for Pulses

For in-furrow application

This product has relatively high moisture content, which is necessary for bacterial survival.

### READ ALL DIRECTIONS BEFORE USING THIS PRODUCT

#### Guaranteed Minimum Analysis

<i>Rhizobium leguminosarum</i> biovar <i>viciae</i> .....	7.5 x 10 <sup>7</sup> CFU/g
<i>Mesorhizobium ciceri</i> .....	7.5 x 10 <sup>7</sup> CFU/g
<i>Bacillus velezensis</i> NCIMB 30322 .....	5.0 x 10 <sup>7</sup> CFU/g

#### HOW IT WORKS

The active ingredients in LALFIX<sup>®</sup> START Spherical Pulses are *Rhizobium leguminosarum* biovar *viciae*, *Mesorhizobium ciceri* and *Bacillus velezensis* NCIMB 30322. *Rhizobium leguminosarum* biovar *viciae* and *Mesorhizobium ciceri* are known to nodulate roots and fix atmospheric nitrogen in a symbiotic relationship with pulses including pea, lentil, faba bean and chickpea plants. LALFIX<sup>®</sup> START Spherical Pulses contains multiple selected strains of *Rhizobium leguminosarum* biovar *viciae* and *Mesorhizobium ciceri* for balanced performance in different environments. *Bacillus velezensis* NCIMB 30322 is a plant growth-promoting rhizobacterium that stimulates root growth, enhances abiotic stress tolerance, and increases nutrient solubilization and water uptake, resulting in a better crop establishment and plant growth.

#### APPLICATION DIRECTIONS

- Follow equipment manufacturer's calibration methods.
- Calibrate in field at time of product use.
- Reference the chart below for specific row width and suggested application rates.
- Environmental conditions may affect calibration set points and overall granular flowability. Check calibration regularly.
- Product bulk density: 0.505 kg per L (31.5 lb per cu. ft.).
- Ensure hopper tank, metering system and delivery hoses are clean from moisture, fertilizer and pesticide residue before calibration.
- Granules should be applied directly into the seed trench furrow with the seed.

**Caution:** If planting for the first time (virgin soil) or if any other adverse conditions exist, such as high-pH soils (above 7.3), long rotations or crops grown in areas with marginal rainfall or arid climates, it is recommended to double inoculate using seed-applied liquid or powder peat inoculants.

Row Width		Recommended Rate			Area Treated	
cm	in	kg/ha	kg/ac	lb/ac	ha	ac
15	6	5	2	4.4	79.3	196
18	7	4.3	1.7	3.8	91.8	227
20	8	3.7	1.5	3.3	106	262
23	9	3.3	1.4	3	116.5	288
25	10	3	1.2	2.7	129.5	320
30	12	2.5	1	2.2	159	393

#### USER TIPS

- Fill granular compartment in field, just before use.
- Always use seeder tank filling screens to remove any granular clumps that may have formed during storage and transport.
- Do not place granules in the same compartment as seeds, pesticides or fertilizer.
- Check/clean metering mechanisms regularly for optimal product flowability, especially under humid seeding conditions.
- Remove unused granules from tank and metering system at end of each day's planting. Do not leave granular inoculant in seeder tank overnight.
- Applying granules at a less-than-recommended rate may result in suboptimal distribution in the soil, resulting in decreased nodulation performance.
- Product performance may be reduced in soil with high nitrogen levels or when applied with high levels of nitrogen fertilizer.

## PRECAUTIONS

The active ingredients in LALFIX® START Spherical Pulses are naturally occurring *Rhizobium leguminosarum* biovar *viciae*, *Mesorhizobium ciceri* and *Bacillus velezensis* NCIMB 30322 cells. Persons allergic to bacteria and immune-deficient individuals should avoid using this product. Avoid exposure through inhalation, or to open wounds and eyes. Standard protective clothing and equipment including gloves, safety goggles and a respirator are recommended during handling and storage. Use this product in well-ventilated areas.

In case of contact with skin or eyes, immediately flush exposed areas with a continuous gentle stream of clean water. In case of inhalation, remove person to fresh air. In case of ingestion, do not induce vomiting but rinse mouth with water. Seek medical attention if discomfort or irritation develops. Medical treatment should be based on the judgment of the physician in response to reaction of the patient.

## STORAGE AND HANDLING RECOMMENDATIONS

- Store in a cool, dry location in the original, unopened packaging. Do not expose to temperatures >35 °C (95 °F) and do not store near direct heat sources (radiant heaters) or freeze/thaw the product.
- Store bags and totes off the floor (use a pallet or shelving) and avoid prolonged direct contact with cold damp surfaces. Do not stack bags or pallets in two or more rows. Store bags flat.
- Use before expiration date stated on the package. The expiration date is valid only for unopened bags stored under cool, dry conditions.
- Open package only when ready to use. Once open, use the entire package. Unused product should be disposed of in accordance with applicable federal, provincial or territorial, and municipal laws and regulatory guidelines.
- Net Contents may vary due to changes in moisture content during storage.

## LIMITED WARRANTY

Danstar Ferment AG/LALLEMAND PLANT CARE ("Danstar") warrants that this inoculant (the "Product") will contain the minimum number of live cells per millilitre/gram as specified on the Product label at the time the Product is first sold by Danstar. Danstar makes no warranty as to the Product's viability or performance since the storage, use and application of the Product and growing condition are beyond the control of Danstar.

To the extent permitted by applicable law, Danstar makes no other warranties of any kind and hereby disclaims all other warranties, whether oral or written, express or implied, including without limitation, the implied warranties of the merchantability and fitness for a particular purpose and the warranty of non-infringement. Buyer of the Product assumes the risk to persons and real or personal property arising from the use, application or handling of the Product. Buyer's exclusive remedy for any and all losses, injury or damages resulting from a breach of this Limited Warranty shall be, at the election of Danstar, either the price paid by buyer for the Product purchased directly from Danstar, or the replacement of such quantity of the Product. Danstar shall not be responsible for any liabilities, damages, expenses, costs, or other losses, including without limitation, loss of profits suffered in connection with the use of the Product, and in no event shall Danstar be liable for any incidental, consequential, special or punitive damages to the buyer or any third party.

Buyers of the Product are deemed to have accepted the terms of this Limited Warranty upon opening the container containing the Product. The terms of this Limited Warranty may not be varied by any oral or written agreement.

LALFIX® is a registered trademark of Danstar Ferment AG/LALLEMAND PLANT CARE.

*Rhizobium leguminosarum* biovar *viciae* strains are selected from a collaboration between Danstar Ferment AG/Lallemand Plant Care and the *Institut National de Recherche pour L'Agriculture, L'Alimentation et L'Environnement (INRAE)*.

Not a plant food product.

Not recommended for use as a fertilizer substitute.

Registration number: 2019106S *Fertilizers Act*

Lot No.: see printing on the bag

Expiration date: see printing on the bag

## Product of USA

### Guaranteed by:

Danstar Ferment AG/LALLEMAND PLANT CARE  
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CH-6300 Zug, Switzerland

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