

Safety Information

To avoid risks to human health and the environment, comply with the instructions for use.

Safety Precautions

Classification according to Regulation (EC) No. 1272/2008 [CLP]

Store locked up in original container.

Keep out of reach of children.

If medical advice is needed, have product container or label at hand.

Contains *Bacillus velezensis* spores. May produce an allergic reaction.

Wear appropriate protective gear, avoid skin contact or breathing of dust, and follow the caution statements of the other treatments if the seed has been pretreated. To minimize risk of allergic exposure, individuals should wear standard protective clothing and equipment including gloves, safety glasses, and an NIOSH approved respirator. In case of allergic contact with eyes or skin, immediately flush the exposed area with water. Seek medical attention if irritation develops or persists.

Storage

Store AmyBac® P45 in the original sealed container in a cool, dry place, protected from direct sunlight and inaccessible to children and pets. Store at temperatures below 77 °F. Under these conditions, the product is stable for at least 2 years.

Directions for Use Application

The spores of *Bacillus velezensis* germinate in contact with growing plant roots, which will be colonized if soil moisture is sufficient and temperature is at or above 54 °F. AmyBac® P45 should always be diluted and can be applied by dipping, seed treatment, spraying, drenching or mixing with other fertilizers. The indicated dosages are basic recommendations. The application technique needs to be adapted to the existing technological conditions. To be effective, the spores need to come into contact with the roots. Thus, foliar application will not have any benefit.

Application strategies

Seed Treatment (0.3 – 7.5 fl. oz./cwt of seeds): Seed treatment may be made for all sown crops. Shake well before use and dilute depending on seed size 0.4 – 3.75 fl. oz. of AmyBac® P45 with 8 – 16 fl. oz. of water per 50 lbs. of seed. For small seeds (e.g., canola), apply 3.75 fl. oz. of AmyBac® P45 per 50 lbs. of seeds. For larger seeds such as wheat and corn, apply 0.4-1.6 fl. oz. of AmyBac® P45 per 50 lbs. of seeds. The smaller the grains the higher the rate to be used, staying within indicated range. Spray on seeds, mix well, and allow drying before sowing.

Treat tubers with 0.3 – 0.6 fl. oz. / cwt of AmyBac® P45 before planting.

Do not use treated seed for food or feed purposes or process for oil. If seeds are stored under dry conditions the spores stay stable for a couple of weeks but nevertheless it is advised to minimize the period between treatment and planting. Do not store excess treated seeds beyond planting time.

Watering (drenching) application (0.02%) Add 0.25 fl. oz. of AmyBac® P45 to 10 gallons of water and apply to transplants or cuttings. Use 3 – 9.5 fl. oz. of suspension per square ft for uniform wetting of soil and root zone. Adjust the amount of water for the specific conditions. Seedlings can also be drenched in seedling boxes before planting. For optimum results, make the initial application of AmyBac® P45 during seedling production.

Spray application (3.5 – 14 fl. oz./a) Optimally spray the AmyBac® P45 product in furrow at planting or sowing. Use common mechanical or motorized equipment for ground applications or apply with a hand-held sprayer on smaller plots, avoiding drift and directing the nozzle towards the rooting zone. Ensure that the spray nozzle size is at least 60 mesh (0.25 mm). In order for the product to reach the rooting zone, irrigate the treated area or time the application before a rain event.

Hydroponics (3.5 – 14 fl. oz./a) Add 0.125 – 0.25 fl.oz. of AmyBac® P45 per 10 gallons (0.01 – 0.02%) of nutrient solution and apply as soon as possible after planting. Thoroughly clean the supply tank or metering unit before use. Depending on your system, calculate the required amount of product per nutrient solution (according to surface). Add the required amount of AmyBac® P45 to the system, using a suitable metering unit (e.g. Dosatron). For smaller hydroponic systems or in case of a lack of calculation options work with 0.01 – 0.02%. Alternatively, or in addition, drench young plants directly in the substrate (e.g. rockwool or peat cubes) with 3 – 16 fl. oz. of suspension per plant (0.02% solution), before or right after transplanting.



AmyBac® P45

Plant inoculant for increased phosphorus mobilization.

Active substance: *Bacillus velezensis* strain FZB45
Concentration: $\geq 2.5 \times 10^{10}$ colony forming units per millilitre

1 QUART (946ML)

CONTAINS NON-PLANT FOOD INGREDIENTS Soil Amending Ingredients Guaranteed Analysis

Active Ingredient(s)
50% Microbial Content
Bacillus velezensis 2.5×10^{10} colony forming units per millilitre
50% Total Other (Inert) Ingredients

Irrigation systems (3.5 – 14 fl. oz./a) Thoroughly clean the supply tank, metering unit or injector equipment before use. Add the required amount of AmyBac® P45 to the irrigation system using suitable metering unit (e.g. Dosatron). Calculate the required water volume, so that the bacteria will reach the root growth area. If not working with a metering unit-fill tank approximately halfway with water and add the required amount of AmyBac® P45. Continuous agitation of the supply tank before and during irrigation is required.

Soil and soil-substrate mix AmyBac® P45 can be applied directly to soil or mixed with soils and other substrates. Mix at a rate of 0.5 fl. oz. of AmyBac® P45 to 10 gallons of water and spray 1.5 – 3 fl. oz. of suspension per sq. ft. of soil or soil-substrate surface. Assure a uniform distribution of AmyBac® P45 through consistent agitation of mixture.

Compatibilities

AmyBac® P45 contains bacterial endospores, which are suited for long-term survival under harsh conditions (resistant to UV, desiccation, high temperature, freezing and chemical disinfectants). This allows mixing with most other agrochemicals (insecticides, fungicides and herbicides) and plant nutrition products. Avoid mixture with copper products, disinfectants and products with antibiotic properties. Follow the more restrictive labelling requirements of any tank mix partner. Do not tank mix AmyBac® P45 with products whose labels prohibit tank mixing.

Mixing Instructions

Fill mixing tank with desired quantity of clean water. Shake well before use and stir the required quantity of AmyBac® P45 into the water in the mixing tank. Add AmyBac® P45 last if combining with other agrochemicals or

Batch Number:

Date of Manufacture:

Net quantity of product: 1 quart (946 ml)

Net Weight: 34.35 oz (974g)

Density: 8.6 lbs/gal at 68 °F (1.03g/cm3 at 20 °C)

AmyBac® P45 is a registered trademark of Andermatt Group AG.



Shake well before use.

Read the label before use. Using this product in a manner that is inconsistent with the label may be an offense.

AmyBac® P45 contains living spores of *Bacillus velezensis* strain FZB45, a naturally-occurring soil bacterium that mobilizes phosphorus and other soil nutrients, and improves the plants' abiotic stress resistance. The use of AmyBac® P45 is most efficient when applied as early as possible during root and plant development.

Depending on crop, repeated applications (after 4 – 6 weeks) are recommended. For optimum results, make the initial application already during seedling production!

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plant nutrition products. Agitate the tank mix before and during application to ensure uniform suspension. Apply the solution within 8 hours, and ensure the pH remains between 5 and 8.5. Ensure adequate amount of water is used to allow AmyBac® P45 to reach the plants' roots.

Cleaning Instructions and Disposal

Equipment cleaning procedure: Rinse application equipment thoroughly with water and spray over previously treated areas. There is no risk of water pollution or harmful effects on bees or the environment resulting from AmyBac® P45.

Do not re-use empty containers. Dispose empty containers in domestic waste after rinsing thoroughly.

For technical information and non-emergency advice call (302) 724-6888

LIMITED WARRANTY

Andermatt USA guarantees the cultures in this package will inoculate the quantity and kind of seed specified on this package when: (1) Product is used prior to expiration date. (2) Product is stored properly. (3) Product is used under favorable soil and weather conditions. (4) Product is used in accordance with directions for use noted on this package. ANDERMATT USA MAKES NO OTHER EXPRESS OR IMPLIED WARRANTY OF FITNESS, WARRANTY OF MERCHANTABILITY, OR WARRANTY FOR A PARTICULAR PURPOSE, OR ANY OTHER EXPRESS OR IMPLIED WARRANTY. ANDERMATT USA'S LIABILITY IS HEREBY EXPRESSLY LIMITED TO THE PURCHASE PRICE OF PRODUCT ONLY. IN NO EVENT SHALL ANDERMATT USA OR ANY SELLER OF THIS PRODUCT BE LIABLE FOR CONSEQUENTIAL, SPECIAL, OR INDIRECT DAMAGES RESULTING FROM THE USE OR HANDLING OF THIS PRODUCT.