

Information on inoculants for

organic production

Novozymes inoculants

Novozymes BioAg manufactures and markets the following inoculants in North America:

- **JumpStart®**, **JumpStart LCO**
- **TagTeam®**, **TagTeam LCO**
- **Optimize®**, **Optimize Gold**
- **PulseSignal II™**
- **Cell-Tech®**
- **Nitragin® Gold**
- **Torque™**
- **Revv™**
- **Ratchet™**
- **Cue™**

NOTE: Not all products are available in all regions.

As some of our inoculants may be appropriate for organic use, we provide this information to help you and your certifier determine the suitability of our inoculants for organic production.

Active microbial ingredients:

The active ingredients in Novozymes BioAg inoculants are naturally occurring, beneficial microorganisms isolated from the soil. We do not manufacture or sell any inoculants that contain genetically-modified organisms (GMO's) as their active ingredients.

Inert ingredients:

Peat

Our peat products are formulated with sterilized milled peat. Natural peat may contain human and plant pathogens. If present, these pathogens can grow and compete with rhizobia, especially when nutrients are added. In order to provide our customers with high performance peat inoculants that are safe to use, our peat is pre-sterilized using gamma and/or electron beam irradiation. In 2001, a major international certifying body made amendments to their standards to allow for the use of inoculants containing gamma irradiated peat. Other certifying bodies have followed suit. Check with your local chapter or certifying body to confirm their position on pre-sterilized inoculants before use.

Corn based formulant

We do not use corn-based stickers in our peat inoculant formulations. We do, however, use a corn based ingredient in our TagTeam liquid soybean and pea/lentil and Cell-Tech liquid pea/lentil inoculants. These are the only Novozymes inoculants to be sold in 2012 that will contain any type of corn based ingredient. For organically grown soybeans or peas, TagTeam peat or granular may be a better choice.

Other important notes for organic production

- JumpStart may contain an ingredient that prohibits its use for organic production
- *Penicillium bilaii* (*P. bilaii*), the active ingredient in JumpStart, is processed using a material that has been sterilized by irradiation but is not present in the final product
- Optimize soybean liquid contains an ingredient that prohibits its use of organic production
- PulseSignal II contains an ingredient that is not appropriate for organic production
- Liquid formulations are manufactured in a way that does not require irradiation for pre-sterilization. Steam and/or filter-sterilization are used to sterilize liquid formulations. However, the bags that are used to ship/store liquid inoculants are sterilized using irradiation prior to use
- TagTeam and Cell-Tech granular inoculants are peat based. The granulated peat carrier is not sterilized using gamma irradiation or electron beam methods
- The active ingredients in all of our inoculant products do not consist of genetically modified organisms (GMO's)
- None of our inoculant products contain sludge or waste derived products
- Nitragin Gold pre-inoculant for alfalfa and sweetclover is OMRI listed



If you need more information or have questions, please contact Novozymes BioAg toll-free at 1-888-744-5662 or visit www.bioag.novozymes.com.

Novozymes is the world leader in bioinnovation. Together with customers across a broad array of industries we create tomorrow's industrial biosolutions, improving our customers' business and the use of our planet's resources. Read more at www.novozymes.com.

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