Coated Seed
Successful seed enhancement for over 30 years!
www.coatedseed.com
Feldsaaten Freudenberger has been producing Coated Seeds for over 30 years. Early trials were conducted by the company’s founder, Siegfried Freudenberger, with the aim of improving germination rates and early seedling development. Whilst the first batches of coated seeds were still manufactured in improvised containers in very small volumes, Feldsaaten Freudenberger today operates a sophisticated production plant that is able to coat a wide range of seed varieties with many different coatings.

The company continually develops its production technology further, and the experience it gathers is directly applied to ongoing product optimisation. This ensures that the composition of Feldsaaten Freudenberger Coated Seed is continually improved. Since 2005, a range of coatings have been available, involving not only a variety of active ingredients, but also different colours for dyeing seeds. This ensures that individual customer requests can be met. In some varieties, coat thickness can additionally be varied to deliver the coating that is best suited for the relevant purpose.

## Development of coated seed since 2000

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Structure of Coated Seed
Nutrient coating – a smart, highly effective coating

Classic Coated Seed consists of seeds coated with essential substances that promote germination. Coatings can consist of various components, including calcium carbonate for adjusting pH levels and talcum. Various micro- and macro-nutrients additionally form important parts of Coated Seeds. Coated Seeds are easy to distinguish visually from conventional, uncoated seeds, without the shape of seeds being altered.

The benefits of coating seeds apply to both single seeds and seed mixtures, regardless of whether they are sown manually or using machines. In extreme terrains that are difficult or impossible to cultivate (e.g. steep slopes), Coated Seeds don’t require the same amount of soil preparation that uncoated seeds do.

Every Coated Seeds variety is inoculated with humic acid and a plant health booster to ensure healthy, rapid germination for any field of application.
Benefits of Classic Coated Seed – overview:

- Better pre-emergence rates due to better soil contact
- Optimal early development due to ideal nutrient supply of seedlings
- Preservation and protection of coated seeds until the optimal degree of moisture is reached
- Easy sowing and even seed distribution
- Reliable and lasting seed placement, protection against seeds being carried away by wind
- No losses from feeding birds and rodents
- Contains plant health boosters to promote plant health and boost resistance in young plants
- Contains humic acid for reliable germination and increased nutrient intake

Bio Coated Seed is identical with Classic Coated Seed, but is additionally certified organic and can therefore also be used for organic seeds.
Coated Seed Rhizo
Rhizobacteria-inoculated seed

Coated Seed Rhizo contains specific rhizobia bacteria tailored to the plant species in question. So, for all legumes, there are suitable rhizobia strains for optimum performance. Legumes are only able to convert atmospheric nitrogen from the soil into plant-usable nitrogen with the aid of root nodule bacteria. These bacteria form a symbiotic relationship with the legume. Once the plant has produced its first root hairs after germination, it excretes substances into the soil which attract the bacteria. The bacteria penetrate the root hairs and the first nodules are formed.

In these, the bacteria obtain nutrients produced by the legume and in turn the bacteria absorb nitrogen from the soil and convert it into nitrate or ammonium which is then made available to the plant. The closer the nodule bacteria are to the plant’s root hairs, the faster the nodules are formed.

The active substances contained in coated seed are supplemented by inactive rhizobacteria, which are activated as soon as the coating absorbs moisture and the seed starts to germinate.
Benefits of Coated Seed Rhizo – overview:

- Coated Seed Rhizo contains specific rhizobacteria in addition to the "Classic" active ingredients
- Inoculation with rhizobacteria ensures rapid symbiosis between plants and bacteria and therefore rapid nitrogen fixing
- Clear growth edge compared to conventional seeds
- Specific rhizobacteria formulations comprising bacterial strains that are optimally matched to the host plant are available for each plant variety.
- Available for: lucerne/alfalfa, several varieties of clover and small-grain legumes
Coated Seed Nutri contains a starter nutrient coating with nitrogen and phosphate to ensure that seedlings are optimally supplied with nutrients during their early stages of development. These nutrients are available to seedlings as soon as the first roots are formed to deliver rapid, healthy growth. The fertiliser concentration is fine-tuned to supply optimal quantities of nutrients to each seedling.

The difference to conventional uncoated seeds is obvious within only a few days: Seedlings with Nutri coating have a vast growth edge compared to conventional uncoated seeds, allowing them to become established much more quickly.

Seeds are coated with an additional layer of starter nutrient, which is instantly available to seedlings.
Benefits of Coated Seed Nutri – overview:

- Coated Seed Nutri contains N+P fertiliser in addition to the “Classic” active ingredients
- Fertiliser supplies seedlings with nutrients in the very early stages of development
- Clear growth edge compared to conventional seeds
- Better establishment compared to uncoated seeds
- Healthy, robust plants
Faster germination due to germination accelerators

The addition of novel germination accelerators speeds up the germination process and ensures that seeds become established much more quickly. Various natural growth boosters and a novel composition of active substances accelerate the biological processes within seeds, resulting in earlier germination. Depending on the variety, the germination period may be reduced by up to several days.

This process is particularly advantageous in varieties with very long germination periods including, for example, Kentucky bluegrass, which takes about four weeks to germinate after sowing. The coating not only accelerates the germination process, but also optimises seedling growth, resulting in faster growth than can be achieved with uncoated seeds.
Benefits of Coated Seed Speed – overview:

- Coated Seed Speed contains a germination accelerator in addition to the “Classic” active ingredients
- Faster germination compared to uncoated seeds
- Clearly improved seed vitality under extreme conditions
- Rapid, healthy seedling development
- Robust plants
Many fungi thrive under warm and moist conditions, damaging seeds and seedlings and potentially resulting in substantially reduced pre-emergence and weak seedlings. The spores of these harmful moulds and mildews are virtually omnipresent, and fungal infections can therefore develop wherever the right micro-climate prevails.

The incorporation of Bacillus subtilis spores in seed coating effectively suppresses moulds and mildews. Active bacteria develop from these spores after sowing to protect seeds and seedlings, resulting in substantially better seedling health and considerably reduced losses. Bacillus subtilis also supports existing plants, as it actively protects them against infection.

The Bacillus subtilis spores form an additional coating component that is activated after sowing.
Benefits of Coated Seed Speed – overview:

- Coated Seed Speed contains the bacterium Bacillus subtilis in addition to the “Classic” active ingredients
- Bacillus subtilis actively prevents fungi from becoming established
- Clearly improved seed vitality under extreme conditions
- Beneficial effect extends to already established plants
- Natural suppression of fungi, not a chemical fungicide
- Spores are long-lived and can develop even after long storage periods
Coated Seed WASP

Water Absorbing Seed Process

Tried and tested absorber technology has allowed us to coat seeds with a nutrient coating that stores moisture. This treatment produces unique power seeds, resulting in seedlings that are supplied with essential nutrients and moisture from the start, even during dry periods. The absorber material stores moisture when it comes into contact with water and then releases it to the seedling as needed. The nutrients contained in the coated seeds are dissolved in the water and then stored in the absorber material.

Coated Seed WASP boosts the water absorption and retention properties of seeds by a factor of up to 100 to ensure that seeds are able to swell and receive a reliable long-term supply of moisture. The additional water supply delivered by WASP technology constitutes an enormous benefit, particularly under extreme conditions such as drought and heat. The absorber retains its storage capacity for several weeks to ensure that seedlings are reliably supplied with water until they have become established.

A water-retaining absorber layer capable of retaining many times its own volume of water is incorporated in the coating during the coating process.

- **1.** Outer protective coating
- **2.** First nutrient layer
- **3.** Stone meal
- **4.** Humic acid
- **5.** Second nutrient layer
- **6.** Inner protective coating

INDIVIDUAL SEED
+ humic acid
+ plant health booster
Seeds absorb moisture

Swelling process releases nutrients

Rapid germination ensues

Strong roots are formed

Benefits of Coated Seed WASP – overview:

- Coated Seed WASP contains a moisture absorber in addition to the “Classic” active ingredients
- Superior performance over competitor products, particularly during dry periods
- Outstanding benefits in times of heat and drought
- Increased water retention capacity by a factor of 100
- Unique on the market
Benefits of Coated Seed at a glance:

- Better pre-emergence rates due to better soil contact
- Optimal early development due to ideal nutrient supply of seedlings
- Preservation and protection of coated seeds until the optimal degree of moisture is reached
- No seed losses from seeds being blown away
- Contains plant health boosters to promote plant health and boost resistance in young plants
- Contains humic acid for reliable germination and increased nutrient intake
- Ideal for sowing solutions such as fertiliser spreaders, slug pellet spreaders etc.
- Active substances (fertiliser, rhizobacteria, absorbers etc.) are placed directly on seeds

Selected examples:
- Coated Seed WASP with water absorber
- Coated Seed Nutri with starter nutrient
- Coated Seed Rhizo with rhizobacteria