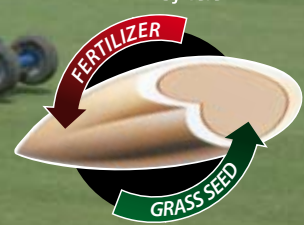


# iSeed®

Nutrient Seed Coating for Turf Grasses



**iSeed®**  
by Yara



# iSeed®

## Nutrient Seed Coating for Turf Grasses

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#### DLF-TRIFOLIUM SEEDS & SCIENCE

DLF-TRIFOLIUM closely focuses on the demands of customers as well as on the latest trends in the grass seed and clover markets. Offering one of the world's largest research and breeding programmes in turf, DLF-TRIFOLIUM is working continually to improve the quality and reliability of all its varieties. To ensure these varieties meet the needs of the marketplace, they are tested in a worldwide trialing network to assess their adaptation to different environmental conditions and uses.

DLF-TRIFOLIUM is the world's largest producer and distributor of grass seed, with subsidiaries in Denmark, Sweden, Holland, Belgium, UK, France, Germany, Czech Republic, Russia, United States, China and New Zealand. From such a worldwide distributor network, customers can expect the best service and support.

#### iSeed®: years of research and development

Our world is changing quickly; customers are still looking for the best solutions and high quality grass seed products. However they are also looking to reduce inputs of pesticides, fertilizers and water to preserve our environment.

The R&D department of DLF-TRIFOLIUM has been working on products that need lower inputs for a long time and several years ago began collaboration with the Yara fertilizer company. The aim of which was to combine the best grass seed genetics with all the nutrients needed by a seedling in a single coating, so as to improve the establishment of the plant but also reducing inputs at the same time.

After substantial laboratory, greenhouse and user trials, iSeed® was developed and has subsequently been successfully tested in user trials in many European countries.



**MAIN BENEFITS OF ISEED®**

• **BETTER SWARD QUALITY**

- FASTER EARLY GROWTH AND MORE PLANTS
- EARLIER AND LONGER PLAYABLE FIELD
- LESS WEEDS
- DENSER AND STRONGER SWARD

• **EFFICIENT NUTRIENT UTILIZATION**

- ENVIRONMENTAL FRIENDLY
  - COST EFFECTIVE
- **SAVING TIME AND MONEY**
- SOWING AND FERTILIZATION IN ONE PROCESS

**Feed per Seed**

Grass seeds are small, contain very small amounts of nutrients and are often sown into cold soils with low availability of P (and N).

Traditionally fertilizers can be applied in several ways, either broadcast, in bands, mixed with seed, in the seed row or as a seed coating. Phosphorus is especially important as a pre-seeding application for rapid establishment. The risk of applying fertilizers as a seed coating is that they are likely to cause phytotoxicity, as some soluble fertilizers can increase salinity. iSeed® has changed this rule.

iSeed® is a patented seed coating that focuses on improving nutrient utilization during the early stages of plant growth. Typical nitrogen content found in other commercial products is 1-2%, with the effects often being negligible. The iSeed® coating which is applied, contains 20% nitrogen and 4% phosphate with both fast acting nitrogen and phosphorous,

and slow release nitrogen, without harming the seeds. During the application process the weight of the seed is doubled so that the coated seed contains 10% N and 2% P in total.

The amount of N and P applied per hectare will depend on sowing rates. Some examples of which can be found in the next table. With iSeed®, every seed has its own coating of nitrogen and phosphorus, and utilizes them efficiently from germination. Strong early growth is important for even plant establishment and success in competing with weeds and overcoming stress.

kg seeds/ha	kg iSeed®/ha	kg N/ha	kg P/ha
100	200	20	4
200	400	40	8
400	800	80	16



**Improved turf quality**

The early growth promotor

iSeed® is a nutrition solution for improved establishment and quality. No special techniques are needed other than calibrating the sowing machine correctly. With iSeed® the seedlings can get a head start in life.

Number of plants counted in a sample area of 509 cm<sup>2</sup>

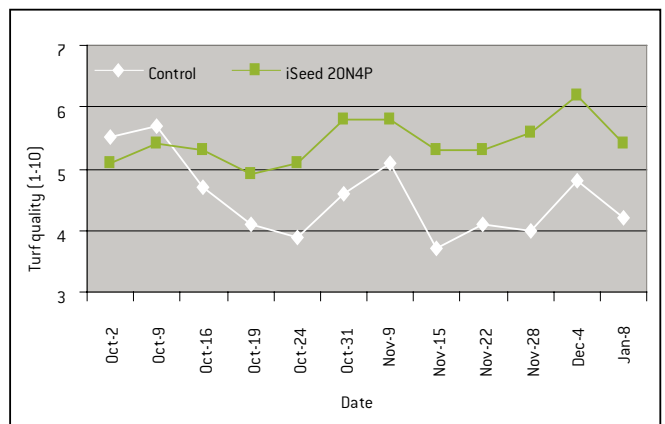


Source: IPC Plant

More and stronger plants

“The nutrient seed coating improved the uptake of phosphorous. iSeed® was not phytotoxic for roots. The number of lateral roots per seedling was increased by the nutrient seed coating treatment from the start of the root formation. The number of plants was increased as well.”

Mean sward quality as affected by treatments during establishment



Source: STRI-Bingley

“The iSeed® nutrient seed coating results in a better sward quality.”

Uncoated seeds start to germinate and look for nutrients, the iSeed® coating dissolves and the nutrients are quickly available giving a higher number of seedlings, faster overall germination and final establishment. The resulting sward is denser and contains less weeds, meaning that pitches can be put into play earlier.

Pictures: left iSeed®, right control



Dedication  
to bring out  
the very best  
in seed





IN THE UK STRI-BINGLEY CONCLUDED AFTER FIELD TRIALS IN 2006: "THE ISEED® TREATMENT SIGNIFICANTLY AFFECTED ESTABLISHMENT AND GROWTH, IMPROVING THE RATE OF BOTH."

### SAVING TIME AND MONEY

USING ISEED® MEANS YOU CAN COMBINE SOWING AND FERTILIZING IN ONE PROCESS AND ALSO GET AN IMPROVED RESULT.

### More efficient nutrient utilization

Phosphorus is especially important as a pre seeding application for early establishment. When broadcasting fertilizer, the utilization rate of phosphorus generally is between 5 and 10%. Band application can increase this to 10%, and placing the fertilizer in the seed row can lead to 15% utilization. The most effective method is to place the fertilizer in a seed coating; where the utilization rate will then be increased to 20%. Nutrient uptake is faster when the nutrients are applied in the soil and not broadcast. This is an advantage when overseeding. [Source: Yara.]

Phosphorus is easily fixed in the soil into forms that are unavailable for plant uptake, so the closer the seed is to the nutrient, the better the utilization rate. With iSeed®, the key nutrients are attached to the germinating seed and developing roots, thus the nutrients are taken

up quickly and efficiently. The roots and shoots grow rapidly and the seedlings become strong and vigorous. This improves the use of all the available soil nutrients and decreases nutrient losses into the environment.

The amount of fertilizer that can be applied in traditional seed coatings is limited as there can be problems with phytotoxicity. The maximum levels that can be found in the market place are typically between 1 and 2% N. Such low levels result in little or no effect. iSeed® is different and makes it possible to add more than 20% of nitrogen in the seed coating.

By applying iSeed®, the fertilizer is in the right place at the right time and the coating also ensures a better contact with the soil.

## Experiences on football fields

### Lyngby - Denmark

Jørn Sørensen, the experienced groundsman of Lyngby Stadium emphasizes the importance of a dark green colour on a football field often shown on TV. "When overseeding with iSeed® the grass becomes darker", says Jørn Sørensen. "With iSeed® I see faster establishment and more plants. Another benefit is that the sward contains less weed."



FOR OVERSEEDING JØRN SØRENSEN USED 2,5 KG  
iSeed® PER 100 M<sup>2</sup>

**iSeed®**  
by Yara



LYNGBY STADIUM IS IN THE VIASAT DIVISION IN  
DENMARK

### Sittard - The Netherlands

Fortuna Sittard Professional Soccer team playing and runner up in the Second Soccer Pro League in South of the Netherlands. The main field of Fortuna Sittard was completely renovated using Topgreens' TopSport iSeed® during the third week of May. Mr. Queisen, the landscaper responsible for the job reported: "I have never experienced such a good establishment of the pitch. The sward is denser and stronger than ever seen before at the start of the new season." Mr. Roger Reijners, the chief trainer of the team, fully agreed with this as well.



# Dedication

## To bring out The very best In seed

iSeed® is fertilizer coated grass seed that offers a number of benefits, i.e. faster establishment and a denser sward.

iSeed® ensures efficient nutrient utilization.

iSeed® results in the best quality turf possible.

iSeed® saves you time and money.

This brochure explains the benefits of iSeed®, and the research behind it.

DLF-TRIFOLIUM focuses on offering you the best products possible. We achieve this through a continuous process of research and development. Top quality seed for top quality customers: iSeed®

iSeed® for grasses is exclusively marketed by DLF-TRIFOLIUM, Topgreen, Prodana and Innoseeds.

iSeed® technology is subject to patents and patent application by Yara International ASA. iSeed® is registered trademark by Yara International ASA.

