

Fertilizer

Nitrogen and other nutrients are necessary to ensure a nice green with a good playing quality. However, annual meadow grass also benefits from these nutrients and the objective is therefore to find the optimum combination of nitrogen and type of turfgrass to achieve the optimum competition against annual meadow grass.

In the trial with different quantities of nitrogen and types of turfgrasses a number of measurements are carried out for determination of the best treatments. The measurements include density of the grass, playing quality, colour and water status.

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Playing quality

The requirements for playing quality are the highest on the green. The playing quality depends on the uniformity of the turf, shoot density etc. Factors which are among other things influenced by the amount of fertilizer applied.

During the summer of 2008 Forest & Landscape will conduct a questionnaire study in Scandinavia on golf players' perception of playing quality. A project funded by the "Scandinavian Turfgrass and Environment Research Foundation" (STERF). The aim is to generate knowledge about the factors on which further attention should be focussed when evaluating playing quality in the new innovation project. Furthermore the immigration of annual meadow grass will be studied in the various grass types.

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Further information

Should you wish to know more about the two trial greens, you are welcome to contact:

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Results from the project can be found on www.turfgrass.dk

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Turfgrass

Development of management strategies

Concurrently with more stringent environmental requirements and visions of sustainability the international golf world has turned its eyes towards new types of grasses which do well with a low input of fertilizer, water and pesticides and at the same time maintaining a high playing quality.

Denmark is the world's largest exporter of grass seed – to a number of widely different purposes ranging from green belts in Kreml to rolled turf for the Olympic stadium in Beijing. The Danish seed companies are constantly striving to develop new types of grasses.

Dansk Golf Union has started a large project cooperation with the University of Aarhus and the University of Copenhagen. Two large trial greens have been established at Sydsjælland Golfklub and DLF-TRIFOLIUM A/S respectively.

The project combines the link between development and testing of new types of grasses, management strategies, playing quality and production of grass seed from the best turf types. Impressions and results will be presented during the project on www.turfgrass.dk.



Environmentally correct green management

Internationally, much focus has been given on the development of sustainable golf course management. In Denmark, the Danish Ministry of the Environment, Dansk Golf Union and Local Government Denmark entered into a voluntary agreement in 2005 to phase out the use of pesticides on golf courses.

The intermediate aim is to reduce the quantity by 75% by the end of 2008. Many golf courses are required by the authorities to carry out environmentally correct golf course management using only a limited amount of fertilizers and water.

Reducing/controlling the amount of annual meadow grass in greens is a key parameter when speaking about environmentally correct golf course management as this makes it possible to reduce the use of fungicides.

Quality

Mowing height and the amount of fertilizers and water are some of the factors of great importance for the growth and the quality of the grass on the greens.

Small quantities of nitrogen

As something unique it will be possible to follow and compare the development of the different types of grasses when both small and large quantities of fertilizers are added.

Nitrogen will be added in the quantity of between 30 to 240 kg N/ha per year in intervals of 30-40 kg to those grasses and grass mixtures that are part of the trial.



Photo: Svend Tveden-Nyborg

Trial green at the Golf Club Sydsjælland

The trial green was sowed in October 2006. The root zone consists of sand, sphagnum and lignite. When established, the necessary quantities of water and fertilizers were added to achieve a good and uniform growth of the grass.

The actual trial period begins in the spring of 2008. Throughout the next 3 years the growth of the grasses and its playing quality will be assessed as will the distribution of annual meadow grass in relation to different levels of fertilizers.

The distribution of annual meadow grass will be followed visually and by photos of every lot that has been planted grass plugs of annual meadow grass. Different methods will be tested to evaluate the playing quality.

The trial green is divided into 3 trials according to mowing height and the need for water of each type of grass.

Trial 1: Little water – mowing height of 5 mm

Red Fescue	Musica (1) Cezanne (2)
Red Fescue mixture	Musica (1), Calliope (1), Cezanne (2), Barcrown (2)
Bent Grass/Red Fescue (green mixture)	Musica (1), Calliope (1), Cezanne (2), Bardot, Jorvik
Bent Grass	Jorvik

Trial 2: Little water – mowing height of 3.8 – 4.8 mm

Bent Grass/Red Fescue (greens mixture)	Musica (1), Calliope (1), Cezanne (2), Bardot, Jorvik
Bent Grass	Jorvik

Trial 3: Lots of water – mowing height of 2.8 – 3.5 mm

Creeping Bent Grass	Penn G-6 Independence
Velvet Bent Grass	Villa 1

1 = Red Fescue without offshoots

2 = Red Fescue with short offshoots



Photo: Svend Tveden-Nyborg

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