



Svenska
Golfförbundet

Modern Banskötsel 2018

Ny handbok från STERF

- Allt om skötsel för att förhindra Vinterskador
- Författare: Agnar Kvalbein, Wendy Waalen, Tatjana Espevig & Trygve Aamlid

www.sterf.org/sv/library/handbooks/winter-stress-management



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WINTER PROTECTIVE COVERS

Usage of wraps to improve winter survival of golf greens

RE-SEEDING AND SPRING RECOVERY from winter injuries

WINTER WORK on golf greens

WARM SPELLS DURING THE WINTER De-acclimation and risk of winter injuries on turf

SPRING STRESSES The difficult transition into a new growing season

WINTER PLAY ON SUMMER GREENS

ACCLIMATION AND WINTER STRESSES What is killing our golf greens?

ANOXIA - When to break the ice?

PREPARING GOLF GREENS for winter survival

GRASS SPECIES AND VARIETIES for severe winter climates

Introduction

Some greenkeepers regret to prevent winter injuries good results: their effort payback. The covering practice will protect the grass from temperature. Some will think while others claim that the risk of water and ice. This fact sheet will discuss protective covers can be used in different winter the research and published!



CAENADIA TURFGRASS RESEARCH PROGRAMME
LA FONDATION CANADIENNE DE RECHERCHE EN GOLF

Introduction

Winter play on courses common in the Nordic you are a few hundred of the Copenhagen / A very close to the west and Norway will the G the winter mild climate snow and frost away of winter and this climate northern Scotland. The winter climate most golf the Nordic.

The climatic condition number of staff/work courses you will find a members with full area. Most of the staff are 6 months and leave for work locally or they're countries in October.

Summary

- Well acclimated tolerate winter so there are impact of among grass
- Warm spells during winter will damage the grass roots, and hence succession to ice.
- It is difficult to be how many days it need at a certain



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Introduction

discuss the time I need closure of the ice, and to do you are probably not go for the grass, just an in the experience I can golfers to enter. Here we will focus, care aware that in

Introduction

Many golfers and even more golf course superintendents experience disappointments in the spring. The greens look nice when snow melts, but they look their green colour, grow very slowly and do not root well. How can we explain this other than blaming the low temperatures? Research projects on spring injuries on turf grass are very few. There are comprehensive studies on how winter creates the transformation between growing green? acclimation and de-acclimation. Unfortunately this research has revealed that there are differences between species that make it difficult to draw conclusions directly from one turf to another.

Summary

- Grass plants can be very weak after the winter and the increase of soil strength in the spring gives the turf new challenges related to desiccation and soil burn. The use of opening protective covers can be beneficial, but can also result in more vulnerable once the cover is removed.
- Roots can be heaved off or injured during the winter and this could be a problem. Frequent irrigation and fertilization is recommended.
- Fertilization in the autumn and in the spring can improve plant vigor. Excessive use of nitrogen should be avoided in early spring if the turf is overly desiccated after winter stresses. High rates of phosphorus is negative for the microclimate and do not improve spring growth.



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Introduction

A long winter you I grass species turf are killed. They I in their genetic, winter climate are I that is affected onough will where you and greens do to, soil conditions. It be considered if it be analyzed.

Introduction

We expect to problems to common in the inland and lakes in the future, due to related reasons in range that previously had stable differences will more frequent melting and freezing periods the winter, thereby reducing the risk of ice encasement.

Summary

- Ice encasement causes the Nordic countries than any other.
- Ice occurs more frequently than snow between coastal climate in Norway, Iceland, Sweden and Finland.
- We expect to problems to common in the inland and lakes in the future, due to related reasons in range that previously had stable differences will more frequent melting and freezing periods the winter, thereby reducing the risk of ice encasement.



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Introduction

This fact sheet will help you to choose the most winter-tolerant grass species and varieties when establishing, re-seeding or re-sodding turf grass areas on golf courses and elsewhere in the Nordic countries. This fact sheet explains golf grasses, but we will also cover fairways, tees, sports fields and ordinary lawns. The description is limited to cool-season turf grasses.

Many golf courses aim to remove their turf to improve winter tolerance. Successfully changing the sward composition on a green is a complicated process that also includes new maintenance strategies. Re-establishing dead areas after winter requires a gradual changing the genetic composition of a green is not covered in this fact sheet.

Summary

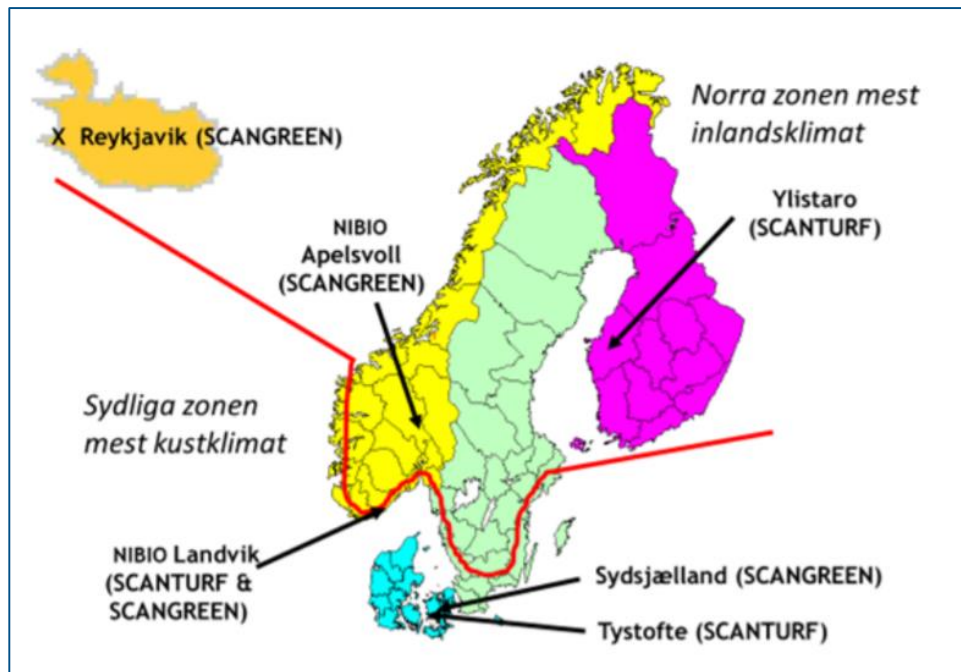
- The most winter-tolerant turf grass species for golf courses and other permanent areas that are irrigated with fungicides to protect against winter diseases are perennial ryegrass (perennial ryegrass), tall fescue (tall fescue), and creeping bentgrass (creeping bentgrass).
- Perennial ryegrass (perennial ryegrass) is the most winter-tolerant turf grass species for golf courses and other permanent areas that are irrigated with fungicides to protect against winter diseases.
- Perennial ryegrass (perennial ryegrass) is the most winter-tolerant turf grass species for golf courses and other permanent areas that are irrigated with fungicides to protect against winter diseases.

There is significant variation among varieties within most species and information about the most winter-tolerant varieties are updated annually at www.sterf.org and www.sterf.org.



1: vinterskador i norden

- Geografiska skillnader
- Kort översikt över olika vinterskador



2: Gräsarter och deras förvärvande av tolerans mot vinterskador

- Plantans härdning och avhärdning
- Frystolerans som en indikator på plantans härdningsstatus
- Arter använda på golfbanor i Norden
- Tolerans mot vinterskador, art för art
- Hur finner man de bästa sorterna inom varje art? WWW.Scanturf.org



3: Skötselmetoder mot vintersjukdomar

- Plantans egenförsvar
- De vanligaste vintersjukdomarna
 - Microdochium - Snömögel
 - Typhula - Trådklubba
 - Andra vintersjukdomar



Bild 5. Trådklubba på brunven i april 2010 på Kongsberg GK.
Foto: T. Espevig



4: Preparering på hösten för att undvika vintersjukdomar

- Gödsling
- Användande av kompost
- Biostimulanter Växtregulatorer
- Mekanisk bearbetning
- Fungicidapplikationer
- Borttagande av träd



Kalkylator Höstgödsling

Räkna fram "din" gödselplan för invintringen

<http://www.sterf.org/sv/library/handbooks/winter-stress-management>



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Autumn fertilization calculator

NIBIO Turfgrass research group, ver 1.0 2017

Calculates weekly nitrogen rates based on expected temperatures and risks assessments

Dominating grass species

Poa annua
Agrostis stolonifera
Agrostis capillaris
Agrostis canina
Festuca rubra

Mark x

Only one species should be marked

x	

Mark the one species that is most important either because it is dominating or because you would like to promote this species and suppress others (*Poa*).

Climate information

Mean diurnal temperature < 10

(day.month.year)

Valid dates are from 1.8.2017 to 1.2.2018

Mean day temperature < 3°C

2017-09-01

Use your experience, or look up weather data

2017-12-01

from a location near by your golf course

Risk assessment (optional)

High risk of winter injuries

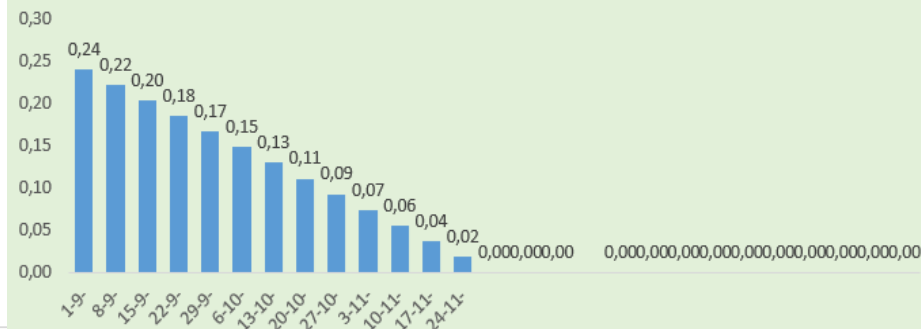
Low risk of winter injuries

No use of fungicides

Mark x

	Based on experience from previous years
	May vary from one green to another
x	Restrictions or your own policy

Autumn fertilization Nitrogen g/m²



5: Åtgärder under vintern

- Snöhantering
- Fungicider under vintern



5: Åtgärder under vintern – is & vattenhantering

- Vinterskador beroende på syrebrist
- Risken för is- och vattenskador beror på det geografiska läget och golfbanans arkitektur
- Preparering på hösten för att minska is- och vattenskador
 - Effekter av skugga och gödsling
 - Luftning Dressning
 - Tillfälliga lösningar för bortförande av smältvatten
 - Vintertäckdukar
 - Installation av instrument för att mäta gräsets kondition under vintern



5: Åtgärder under vintern – is & vattenhantering

- Hantering av snö och is
 - Snöborttagning
 - Ishackning
 - Smälta is
 - Metoder som påskyndar snösmältning på våren



6: Utmaningar på våren

- Brist på solid kunskap
- Frystorka och uppfrysning
- Fotoinhibition eller skador av UV-ljus



Bild 21a,b. Tidig vårgrönska på en green med olika gräsarter på NIBIO Landvik 2009. Övre bilden är tagen den 31 mars, två veckor efter att snön försvunnit efter två månaders snötäcke. Nedre bilden tagen den 6 april. Foto: T. S. Aamlid.



6: Utmaningar på våren

- Vårskötsel
 - Vårtäckningsdukar
 - Vårbevattning

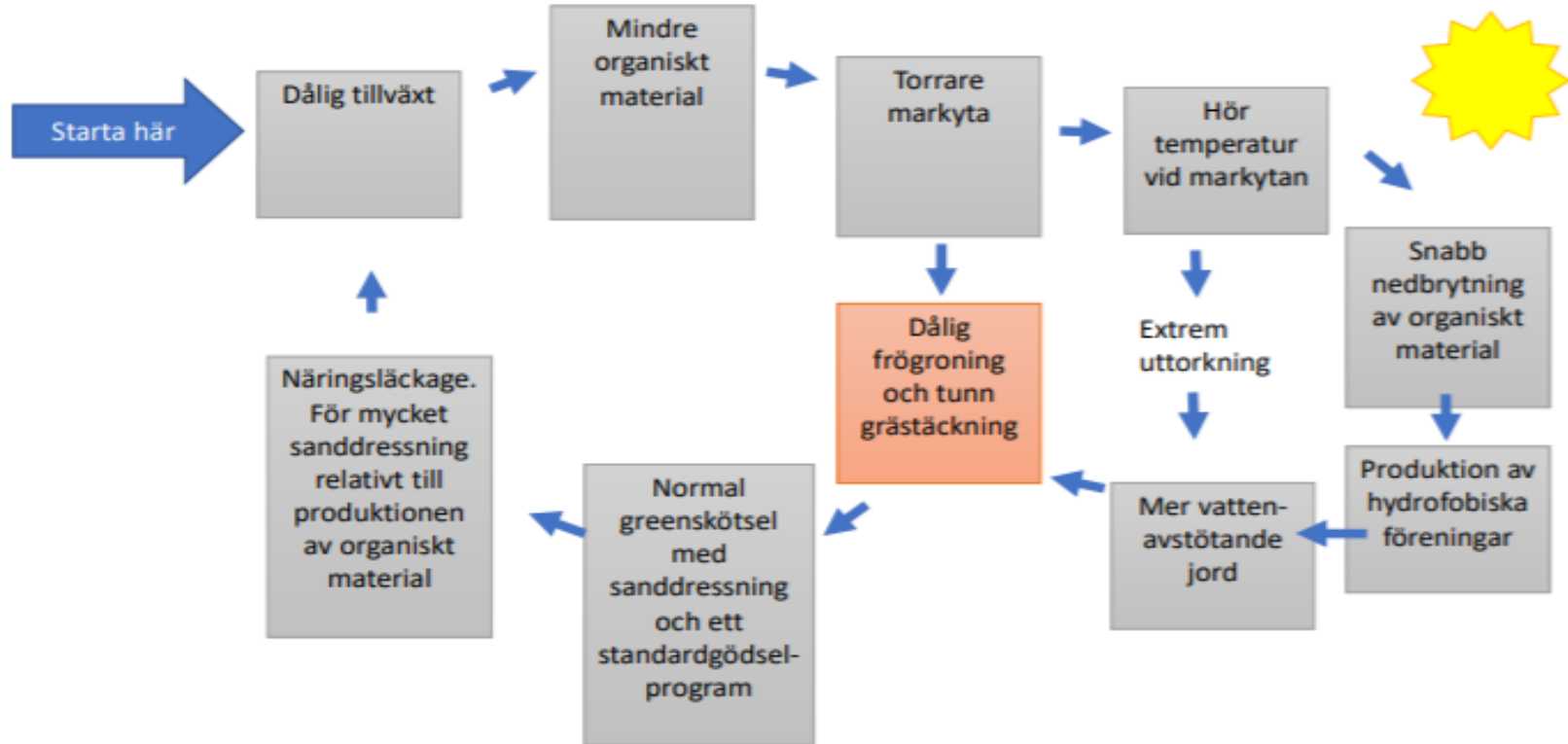


6: Utmaningar på våren

- Reetablering av dött gräs
 - 'Svaga fläcksyndromet'
 - Lösningar på en fläckvis gräsväxt green



Modell – svaga fläcksyndromet





Svenska Golfförbundet

Adress: Box 11016, 100 61 Stockholm. Besök: Idrottens Hus, Skansbrogatan 7

Telefon: 08-622 15 00. E-post: info@golf.se

www.golf.se