

Microdochium patch in creeping bentgrass in spring 2020 (Iceland). Photo: Bjarni Hannesson

Varieties of red fescue and creeping bentgrass for golf greens in Scandinavia

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Microdochium patch in creeping bentgrass in spring 2020 (Landvik). Photo: Karin Juul Hesselsøe.

We are now halfway through SC-ANGREEN 2019-22. Preliminary results (2019-20) are presented here for general impression, diseases and winter damage in varieties of red fescue and creeping bentgrass. In Chewings fescue (*Festuca rubra* ssp. *commutata*), the control variety ‘Barlineus’ and the new varieties ‘Orionette’, ‘Euro Carina’ and ‘Gima’ show good general impression in the Nordic trials, and in slender creeping red fescue (*Festuca rubra* ssp. *littoralis*), ‘Absolom’ and ‘Barswilcan’ together with the control variety ‘Cezanne’ give the best overall impression. In creeping bentgrass (*Agrostis stolonifera*), the two new varieties ‘Matchplay’ and ‘777’ (‘Tripleseven’) are promising and with low attacks of microdochium patch.

Table 1 shows an overview of the 8 species and 56 varieties in the ongoing trials, including plant breeding company / representative. In addition to the

varieties that were entered by the companies we also do a retesting of a large number of control varieties that have been tested in previous SCANGREEN trials. As of 20 March, the variety lists have been updated with mid-term results at www.scanturf.org. We highly recommend this website which also includes varieties that have been tested in earlier SCANGREEN trials and are still on the market.

As of 20 March, the ongoing SCANGREEN test round 2019-2022 includes 5 different test sites in the Nordic countries and the northern United States. The experiments are situated in:

1. Landvik in Norway (southern Nordic test zone)
2. Apelsvoll in Norway (northern Nordic test zone)
3. Reykjavik in Iceland (northern Nordic test zone)
4. University of Massachusetts (USA)
5. University of Minnesota (USA)

The experiments in Massachusetts and Minnesota were initiated and funded by our American colleagues and reflect that SCANGREEN is considered an international leading program for variety testing in northern areas. The American results are considered a supplement when assessing varieties for the Nordic countries and are not included in the ranking at www.scanturf.org. They are nonetheless mentioned in this article. In May/June 2021, a new SCANGREEN trial, identical to the one at Landvik, will be seeded at Smørum GC, Copenhagen, Denmark.

Although established well into the testing period, this new trial will provide a better basis for the ranking of varieties for the southern zone of the Nordic countries. The construction of a new experimental green at Smørum GC has been funded by the Danish Golf Union, and the green will also be used in future SCANGREEN test rounds.

Table 1. Varieties in SCANGREEN 2019-2022 grouped by species and breeding company/representative. Bold fonts indicate controll varieties.

Variety Representative	Creeping bentgrass (<i>Agrostis stolonifera</i>)	Common bentgrass (<i>Agrostis capillaris</i>)	Velvet bent grass (<i>Agrostis canina</i>)	Chewings fescue (<i>F. rubra</i> ssp. <i>commutata</i>)	Slender creeping red fescue (<i>F. rubra</i> ssp. <i>littoralis</i>)	Smooth meadow-grass (<i>Poa pratensis</i>)	Rough meadow-grass (<i>Poa trivialis</i>)	Perennial ryegrass (<i>Lolium perenne</i>)
DLF Seeds	Macdonald	Jorvik	Villa I	Firan	DLF-FRT- 4537		Dark Horse	Clementine
	777 Tripleseven			Orionette	DLF-FRT- 4575			
	Independence I			Torona	DLF-FRT- 4582			
				Gima	Sybille			
					Absolom			
					DLF-FRR-6039			
Barenbrug	L-93 XD			Dancing	Barswilcan			
				Musica				
				Barlineus				
DSV			Avalon	EuroCarina	Charlotte	Limousine		
					Finesto			
Scandinavian Seeds	Ardent			Kalle		Professor		
Mountain View Seeds		PPG-AT 104 (Musket)		PPG FRC 113	PPG-FRT 101			
				Radar				
Graminor		Leirin	Nordlys	Lykke				
				Lystig				
				LøRc 0010				
Svensk Jordelit	Pure Select							
	Crystal Blue							
	Pure Distinction							
Semillas Fito	Valderrama							
	Tour Pro							
Landmark Seeds	Matchplay							
	Luminary							
ICL / Everris	DC I	Heritage					Traction	
	Riptide							
PGM	007							
Tempo Verde	Penncross							
	Penntrio							
Germinal		AberRoyal						

Chewings fescue

(*Festuca rubra* ssp. *commutata*)

Of the 14 varieties tested, the control variety 'Barlineus' has so far been ranked highest with an average general impression of 5.5 (scale 1-9, 9 = best) on average for all five trials (figure 1).

When broken down into test zones, 'Barlineus' also scores highest for both the northern and the southern zone of in the Nordic countries, followed by 'Euro Carina' and 'Orionette'. Due to lack of seed 'LøRc0010' is not tested in the northern test zone, while 'Euro Carina' is not tested in the US. 'Gima' is another variety that ranks high in the northern and southern zones of the Nordic countries. The results for 'Dancing' may not be entirely reliable as it had to be reseeded after the others varieties due to poor germination.

So far, no significant differences have been found among Chewings fescue varieties in terms of disease. At Apelsvoll, there was much damage in spring 2020 after a winter with a lot of ice (photo 1).

The varieties 'Barlineus', 'Radar', 'Gima', 'Musica' and 'PPG FRC 113' were partly damaged and had to be reseeded (photos 2 and 3).

In contrast, reseeded was not necessary in the trial in Iceland.



Photo 1. Ice on trial site Apelsvoll in January 2020. Photo: Pia Heltoft

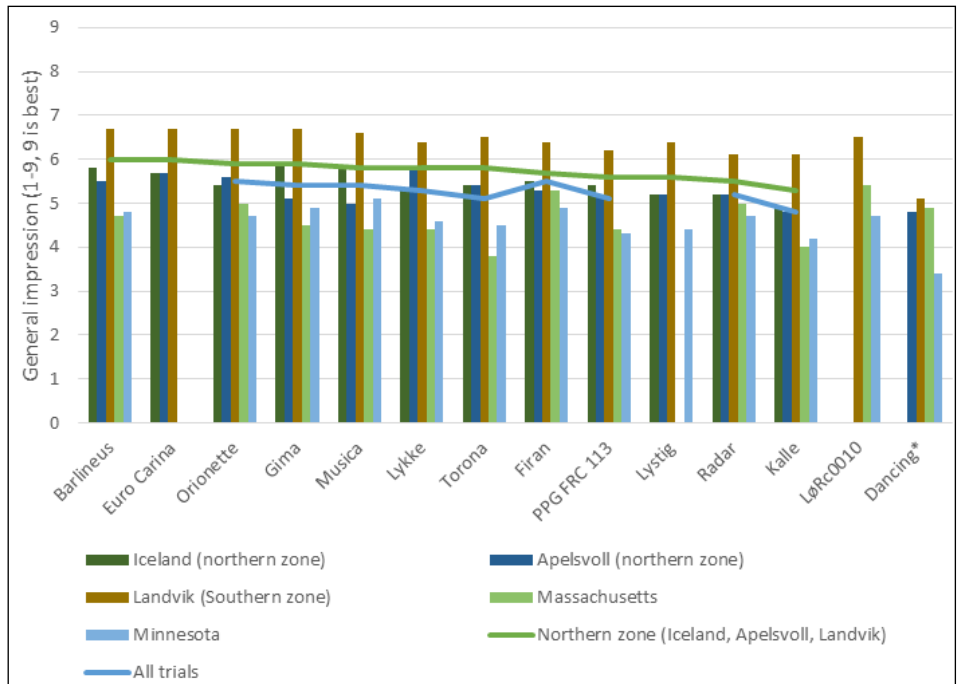


Figure 1. General impression (1-9, 9 is best) for Chewings fescue (*Festuca rubra* ssp. *commutata*) shown for five trial sites (Iceland, Apelsvoll, Landvik, Massachusetts, Minnesota) and mean values for the Nordic countries (Iceland, Apelsvoll and Landvik) (green line) and all five trial sites (blue line).



19 April



1 May



23 May



3 June

Photo 2. Drone photos of the experiment at Apelsvoll at four different dates from mid-April to early June 2020. The creeping bentgrass plots had to be reseeded twice (May and August) before they established well. Five varieties of red fescues had to be reseeded (see photo from 23 May). Photos: Maximillian Pircher and Håvard Lindgaard.



Photo 3. Reseeding in May 2020. Photo: Pia Heltoft.

Slender creeping red fescue (*Festuca rubra* ssp. *litoralis*)

At the three trial sites in the Nordic countries, ‘Barswilcan’ has so far given the best general impression in this test round, the control variety ‘Cezanne’ and ‘Absolom’ follow just behind (figure 2).

On average for all five test sites, ‘Cezanne’ ranks highest with an average overall score of 5.5. ‘Cezanne’ also gave the best overall impression in the previous test round of SCANGREEN (2015-2018). ‘Charlotte’ and ‘Sybille’ are other varieties that have a high rank in the northern (Apelsvoll and Iceland) and southern (Landvik) test zone, respectively. ‘Charlotte’ is not tested in the US.

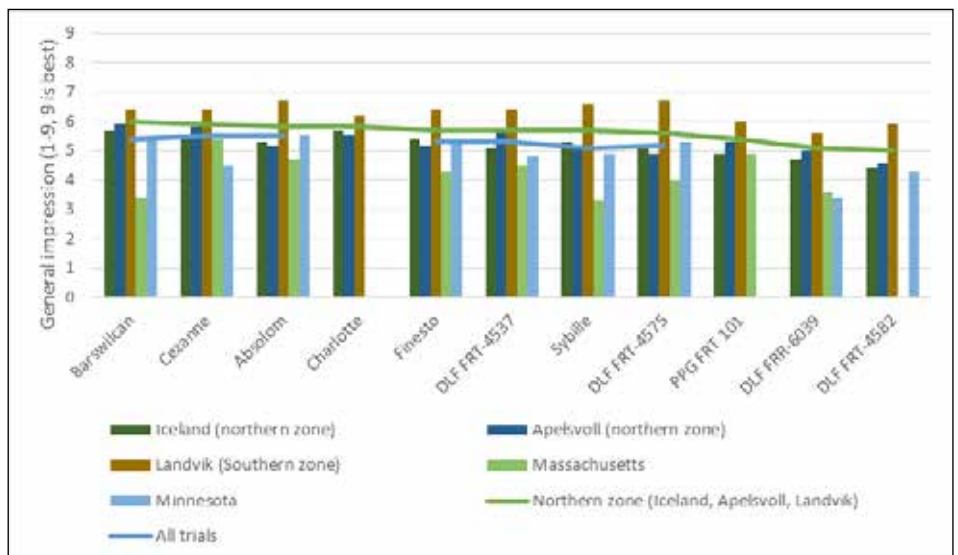


Figure 2. General impression (1-9, 9 is best) of for slender creeping red fescue varieties shown for five trial sites (Iceland, Apelsvoll, Landvik, Massachusetts, Minnesota) and mean for the Nordic countries (Iceland, Apelsvoll and Landvik, green line) and all five trial sites (blue line).

Creeping bent (*Agrostis stolonifera*)

Creeping bent was tested only at four trial locations in 2019-2020. All varieties of creeping bent were totally winterdamaged at Apelsvoll and we did not succeed in re-establishing the creeping bentgrass plots until the USGA-spec. sand had been replaced (Figure 1-3). In addition to winter damage, we suspect that this was due to an attack by nematodes.

Of the 17 varieties tested, 'Matchplay' and '777' ('Tripleseven') have so far been ranked the highest as a mean for all four trial sites. 'Ardent' does well in Iceland and at Landvik but is not performing so well in the American trials. 'L-93 XD' performs well and is ranked second highest at Landvik and in Minnesota. 'Pure Distinction' performs well at Landvik and in the US, but it is not included in the northern zone of the Nordic countries. In the last SCANGREEN round, 'Pure Distinction' ranked low in the northern zone, but high in the southern zone.

Microdochium patch (*Microdochium nivale*) was registered in creeping bentgrass in early spring 2020. On average for Landvik and Iceland, the largest infection symptoms were in 'Pure Select' (6.5%), 'Piranha' (5.2%) and 'Valderrama' (5.0%) (Figure 4).

In Minnesota, most microdochium patch was registered in 'Penncross', 'Ardent' and 'Independence I'. In contrast, Ardent was one of the varieties with the least microdochium patch at Landvik and in Iceland. In the last SCANGREEN round, 'Luminary' and 'Pure Distinction' stood out with the microdochium patch than the other varieties, but in this round they are not among the most susceptible varieties.

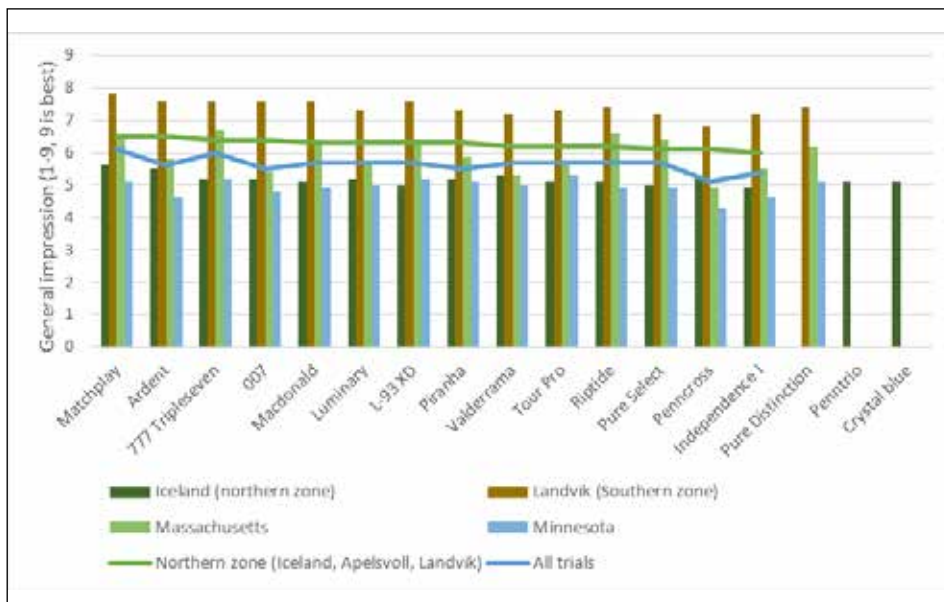


Figure 3. General impression (1-9, 9 is best) for creeping bentgrass shown for five trial sites (Iceland, Apelsvoll, Landvik, Massachusetts, Minnesota) and mean for the Nordic countries (Iceland, Apelsvoll and Landvik) (green line) and all five trial sites (blue line).

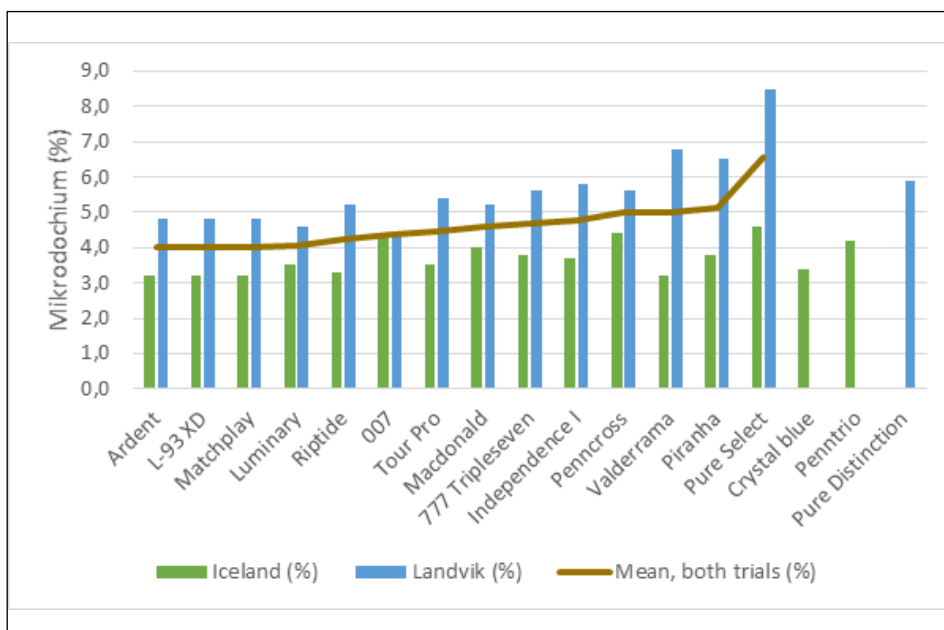


Figure 4. Microdochium (%) in creeping bentgrass (*Agrostis stolonifera*) shown for two trial sites (Iceland and Landvik) and in average for both sites.