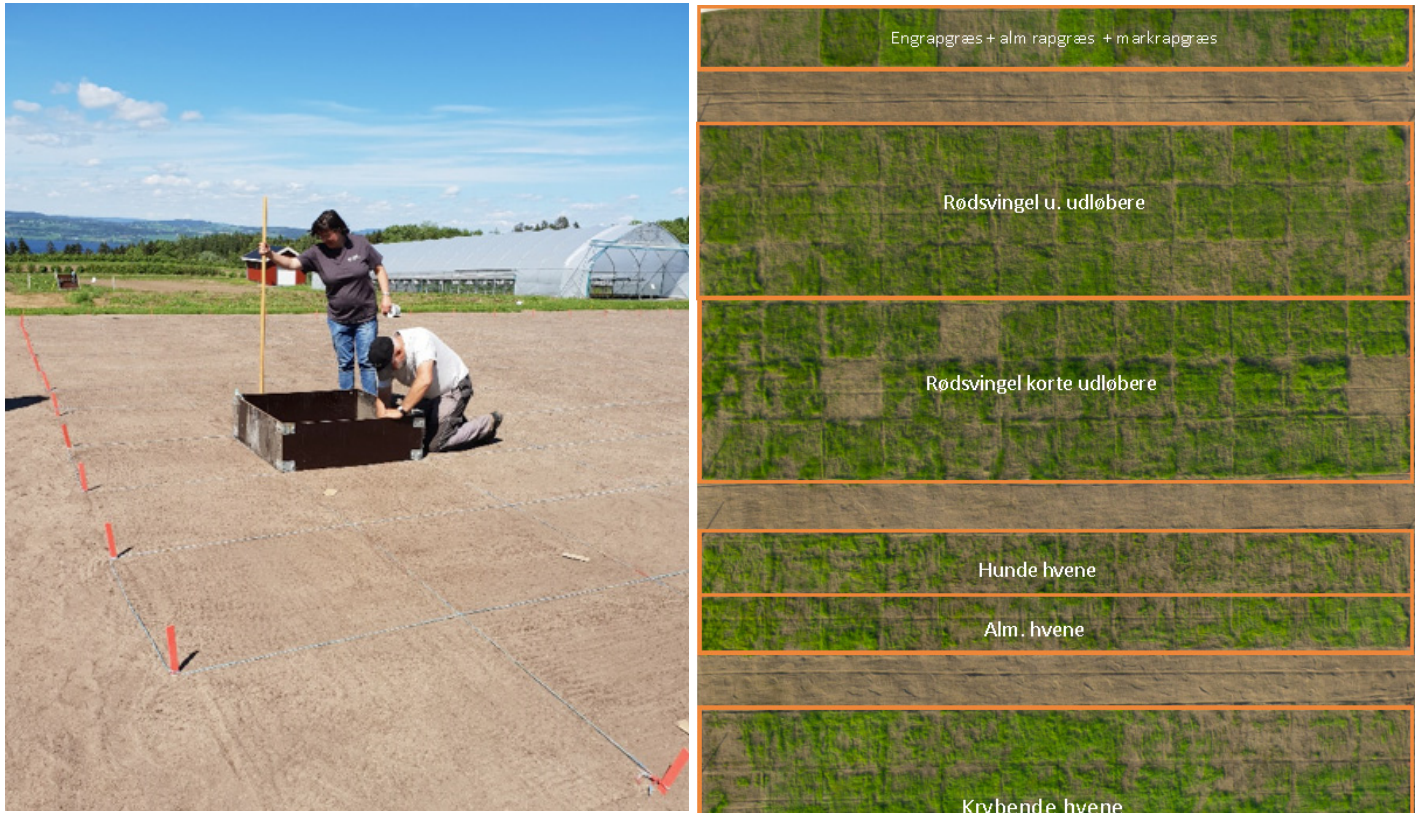




## **Testing of new turfgrass species and varieties in SCANGREEN 2019-2022**

*By Pia Heltoft, Karin Juul Hesselsøe, Trygve S. Aamlid, Karin Normann, Bjarni Hannesson and Kemeng Xiao*

# Testing of new turfgrass species and varieties in SCANGREEN 2019-2022



**Figure 1.** Sowing at Apelsvoll (17-18. June) and dronephoto one month after establishment (photos: Pia Heltoft and Maximillian Pircher)

**SCANGREEN is a Scandinavian variety testing program for grasses and varieties for golf greens cut at 3-5 mm. The program started in 2003. The trials that have been sown this year are thus the fifth test round. The program takes place over a period of 4 years (2019-22), one establishment year and three evaluation years.**

Testing of new varieties is important for improving the quality of turfgrass. In breeding, the focus is particularly on disease resistance and tolerance to abiotic stress (frost, ice, water, etc.). In SCANGREEN, the varieties are tested at four different experimental

sites in the Nordic region. The trials are located at Landvik in Norway and Sydsjællands Golf Club in Denmark (southern test zone), as well as at Apelsvoll in Norway and Reykjavik in Iceland (northern test zone). As part of an American-Nordic collaboration, the new test round has also been extended to include trials at the University of Massachusetts and the University of Minnesota in the United States. New trials were established in the summer of 2019.

The trial at Apelsvoll was sown on 17-18. June as the first of the Nordic trials. Figure 1 shows the test field during establishment and drone photo after one month.

Next, the field trial at Landvik was established. It was sown on 1-2. July. Figure 2 shows the establishment. The trial was immediately after seeding covered to retain moisture and heat.

The experiment in Iceland was established on 6-10. July. The experiment was sown in stages due to unstable weather with lots of wind as well as rain and thunderstorms. Figure 3 shows the experiment during establishment and after one month.

The last established field was the trial at Sydsjællands Golf Club, which was sown on 15-19. August (Figure 4).



**Figure 2.** Sowing at Landvik (1-2. July) and the established green 6 weeks later. (photos: Karin Juul Hesselsøe).



**Figure 3.** Sowing on Iceland (6-10. July) and one month after sowing (foto: Bjarni Hannesson)



**Figure 4.** Sowing at Sydsjællands Golfklub, Denmark (15-19. August) (photo: Karin Normann)



**Figur 5. Participants at the workshop at Landvik 4. September 2019:** First row from the left: Pia Heltoft (Apelsvoll og projectleader SCANGREEN) and Karin Juul Hesselsøe (Landvik). Second row from the left: Tatsiana Espevig (Landvik), Karin Normann (Sydsjælland) and Kristine Sundsdal (Landvik). Third row from the left: Kemeng Xiao (student from China), Tanía Gneist (Sydsjælland) and Bjarni Hanneson (Reykjavik). Fourth row from the left: Lars Havstad (Landvik, projectleader SCANTURF), Corinne Berthuit (France, representative for the European variety testing), Trond Pettersen (Landvik) and Trygve S. Aamlid (Landvik). Fifth row from the left: Markku Niskanen (Ylistaro, Finland (SCANTURF) and Jan Tangsveen (Apelsvoll)). Sixth row: Anders Søndergaard Larsen (Tystofte Denmark (SCANTURF))

## Workshop at Landvik

On September 4th, all participants in SCANGREEN and SCANTURF gathered for a workshop at Landvik. The purpose of the workshop was to review the protocol for the experiments and coordinate the evaluation of the experiments in order to get as uniform an assessment of the different grades as possible. Figure 5 shows a picture of the participants in the workshop.

## Seedmixtures are included again

SCANGREEN is funded 90% by STERF and 10% by registration fees. During this trial period, 30 new varieties have been registered, divided on 8 different species. The varieties are compared with reference varieties of the same species. Varieties of the following species are being tested:

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

- Creeping bent (*Agrostis stolonifera*)
- Common bent (*Agrostis capillaris*)
- Velvet bent (*Agrostis canina*)
- Smooth meadow-grass (*Poa pratensis*)
- Rough meadow-grass (*Poa trivialis*)
- Perennial ryegrass (*Lolium perenne*)

Species and varieties showed good results in the previous SCANGREEN round, especially in the southern test zone. Therefore, in this testround, the following seed mixtures will be studied at Landvik and Sydsjælland:

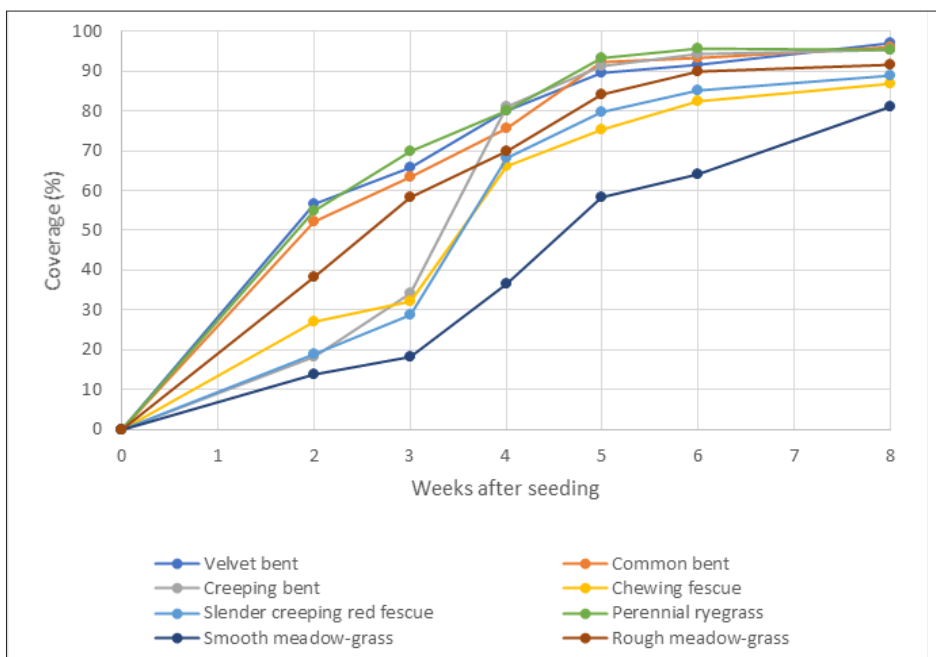
1. 85% *Festuca rubra* + 15% *Agrostis stolonifera*
2. 85% *Festuca rubra* + 15% *Agrostis capillaris*
3. 85% *Festuca rubra* + 7.5% *Agrostis stolonifera* + 7.5% *Agrostis capillaris*
4. Pure red fescue (variety mix with three varieties)
5. 20% *A.stolonifera* + 80% *Lolium perenne*

The varieties are evaluated monthly. They are ranked by overall quality, winter hardiness, disease resistance and competitiveness to weeds and moss.

## Results

Results from SCANGREEN will in the coming years be presented at field walks at the various test sites and published on [www.sterf.org](http://www.sterf.org) and in the Nordic greenkeepers magazines. Preliminary results are shown in Figure 6. These are results from the establishment of different species in the Landvik trial. Here, the coverage rate (%) was determined weekly by Kemeng Xiao, a Chinese student who participated in the experimental work this summer.

The figure shows that perennial ryegrass, common bent and velvet bent established themselves the fastest. For creeping bent, the coverage percentage improved significantly from three to four weeks after sowing.



**Figure 6.** Coverage (%) after sowing of different grasses in the SCANGREEN trial at Landvik in the summer of 2019. (Average for all varieties within a species).