

Golf Course grasses are required to face up to much greater demands than ever but, as Gerard van 't Klooster explains, breeders are trying to keep ahead of the game...

# Taking the ● Strain

Grasses have been used for different sports for a long time but now we ask more from grasses than in the past.

On golf courses, we want to play all year round (summer and winter) and clubs have more members than in the past. When you see the number of rounds played on a golf course during a year, it is much more than 20 years ago and it should be to nobody's surprise that grasses are likely to be worn out.

New golf courses are being built differently from the older generation. The mowing height of the greens, fairways and even the roughs are also completely different. Some fairways nowadays are being maintained to the same standard that greens were in the past. For a grass breeder all these new types of management are important to know what specie and/or variety can be used.

# Taking the Strain

A grass breeder starts with a collection of ecotypes gathered from nature which he crosses between varieties or a crossing of a variety and an ecotype. This new material gives a lot of variation and it is in the hands of the breeder to select for the best material.

The first selection is done in a turf trial with small plots, mowed as with a lawn - sometimes mowed as a golf green. In these plots the breeder can see what is the best material and in the trials they are always check existing varieties, so the breeder can assess whether the new material is better than the existing varieties. This process takes three to four years.

If the new material proves to be better, then it will be selected and the breeder will try to make a new variety from the best material.

For plant breeder rights (by law) a new group of plants is a potential

variety only when the group of plants is new and does not look too similar to an existing variety.

The group of plants must also contain plants with the same growth habit and, last but not least, the next generation of that new group must show the same aspects and qualities as the first generation. We call this stability of the variety.

At this stage the grass breeder will try to make a combination of the best parent plants between these borderlines. This takes another year.

The first seed of a "new" variety will be used for different trials in different countries. At Barenbrug, we want to see where we can use the variety and what is the value of the variety for the greenkeeper in the different climatic zones.

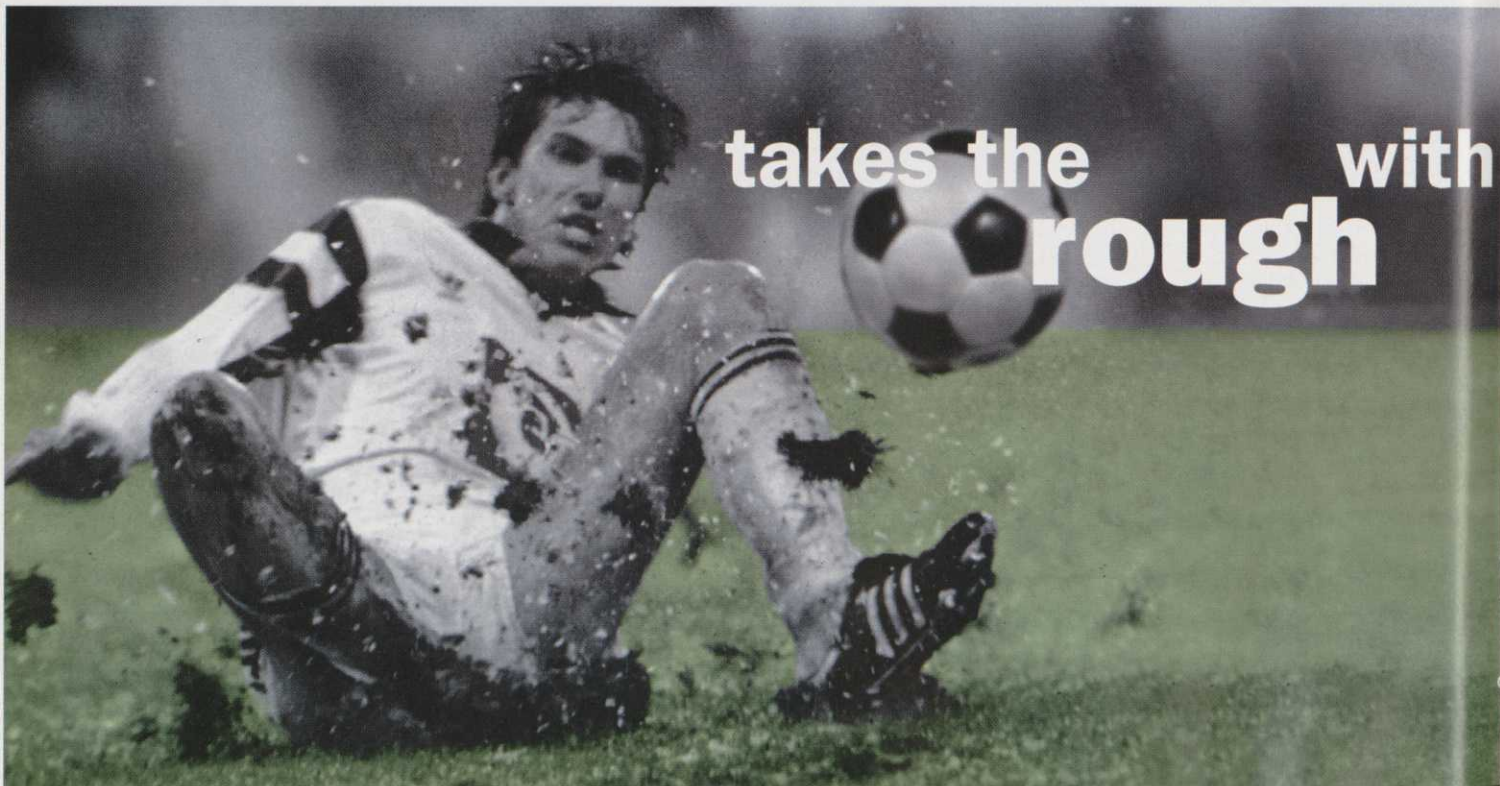
The material (plants) have to deal with dry summers, wet summers, cold winters etc. In the meantime we will also test on seed yield.

For the end user (greenkeeper) it

is important to know that he can buy the variety. The seed company will only start with a variety if it produces enough seed to market it either in some or all-climatic zones.

After three years of testing on our research stations we will produce seed for the first multiplication of a variety. This seed will be used for the official application (STRI and other institutes), storage (Bank of England) of the variety and to start the next multiplication for selling. All the testing and trialing at the STRI etc. will take at least five years, after that time we are able to market the varieties.

All in all, from the beginning until the end it takes about 13-15 years to create a new variety. As it takes a long time the breeders must look into the future and be flexible enough to change some parts of the programmes when there is a demand for new varieties/species as a result of all the environmental changes. I think it must be possible



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to use other grass species too when they are more suitable for some projects.

On a golf course we use mixtures from different species and within the species we use different varieties. For some demands (heavy traffic, under shade) it may be better to start the mixture with other more, suitable species.

On the newer golf courses, the tees are often positioned in wooded (shaded) areas. The new tees are often small, therefore, it is difficult for the grass to recover.

In this situation it could be a solution to use a completely "new" species as *Deschampsia caespitosa* (turfed hairgrass). Some new varieties of this species have proved themselves to be excellent varieties under traffic in the shade. The new varieties tolerate short mowing cutting down to 9 mm, so this can be the solution for the future on golf courses.

Another "new" species is the crest-

ed hairgrass (*Koeleria macrantha*). This species is excellent under more intensive and also extensive situations. It will stay green with less irrigation, it stays green with less fertiliser and the specie tolerates close mowing down to 8 mm. It could be the grass for roughs too, due to its nice flowering habit. When you see this grass flower, you are sure to become enthusiastic about it.

Alongside the new developments, we continue to improve on our existing fescue portfolio like Barcrown, Bargreen and Baroxi and the Browntop bents like Heriot and Bardot. Both species (fescues and bents) are still providing the best playing surfaces for golf courses.

In the future it will be more difficult for the greenkeeper to spray chemicals, so as a grass breeder, we have to find the best combinations of resistances for diseases. For a long time we have been working on the resistance for Red Thread, Snowmold, but now you see differ-

ent diseases such as Dollar Spot, Take All, Pythium etc.

In our laboratory we have some tests to look for resistance in breeding material. Because of the difference between the diseases, it will take a lot of breeding work to get the new "resistant for all diseases" variety. However, while we use mixtures of different species, the risk of using a mixture with good varieties is much smaller than to use the cheap unknown mixture.

The irrigation will be a problem in the future too. Not only the amount of water, but also the quality of the water. For a breeder, it is the case to look for the best variety for growing in less optimal conditions.

Nevertheless when a new golf course is in construction the most attention goes to the clubhouse and the ball washing machines. It is of great importance that the constructor takes more attention to the best grass mixtures.



Gerard Van 't Klooster, Head of the Research Station, at Barenbrug Wolfheze in Holland.

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