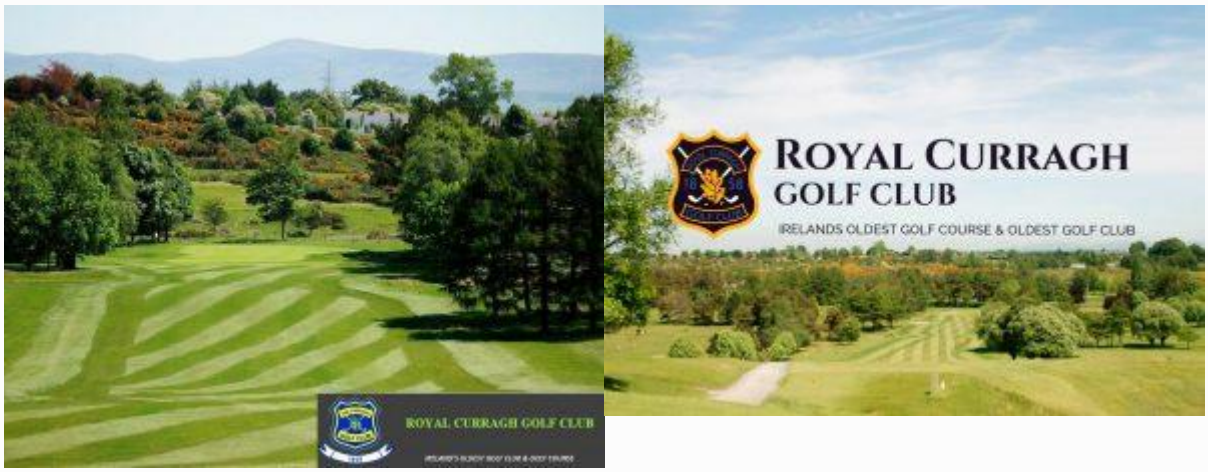
One of the world's foremost experts on turfgrass disease management, John Dempsey PhD, last year carried out a major trial on whether it's possible to maintain healthy turfgrass on a fairway with just one application of a controlled release fertiliser. Here's his report:

In 2016 a field study was carried out on the 15th fairway of the Royal Curragh Golf Club in Ireland. The Royal Curragh is the oldest golf course in Ireland. It was built in 1853 and can be found about an hour south from Dublin, in County Kildare. The trial was carried out by Dr John Dempsey, who is a graduate researcher at the University of the West of England in Bristol. John began greenkeeping in the 1980s and has been superintendent at The Royal Curragh since 1993. Always keenly interested in sportsturf education, John has undertaken courses beginning with basic greenkeeping at the Botanic Gardens in Dublin to an honours degree in turfgrass science at Myerscough College in the UK. He completed a PhD during 2016 in turfgrass pathology at the Centre for Research in Biosciences at the University of the West of England.

John has conducted independent research on turfgrass disease management for the past 10 years, covering extensively the subject 'Microdochium nivale infection of turfgrasses, turfgrass response to infection and the effect of phosphite treatments on disease suppression, turfgrass growth and quality'. John has presented his findings at numerous conferences and seminars in Ireland, Scotland, France, Germany, Norway, USA and most recently at the Turf Managers' Conference at BTME in Harrogate last January.



From May to November 2016 a number of controlled release fertilisers (CRF) were trialled. The objective of this trial was to show that it is very well possible to maintain a steady and healthy turfgrass on the fairways with only one application of CRF. Another point of interest was how the Mivena CRF's

Granucote and Granupermanent Universal would perform in comparison with the fertilisers of the competitors.

Mivena is a Dutch manufacturer of specialty fertilisers which has been active in over 30 (mainly European) countries for more than 10 years. Besides its watersoluble fertiliser, Granusol WSF, and its lines of fine turf fertilisers, Granuform SRF and Granusports SRF, it produces CRFs for golf, sport pitches and landscaping by using its patented unique Duration® coating technology. This coating is 100 percent polymer without any sulphur or metals in the coating and works on the osmosis principle. Therefor the temperature is the factor that determins the release of the nitrogen.

Sierrablen 24-5-8, Best Turf Gold 22-5-6, Granucote 23-5-12, MultiGreen 28-3-15 and Granupermanent Universal 22-5-9 were applied in late May 2016. All fertilisers were applied at a rate of 30g/m2 on the fairway that has been kept in normal use and under standard maintenance practice (apart from fertilising obviously). The fairway is established on a sandy / loam soil, pH7.1, with mixed grass species (Poa annua, Lolium perenne, Agrostis spp. and some Festuca), which was cut at 12mm height. Climatically, the region is defined as a temperate oceanic climate, being mild, moist and changeable with a rainfall annual mean of 754mm and average air temperature of 9.80 degrees Celsius. This type of climate gives rise to ideal conditions for turfgrass growth, almost throughout the entire year.

On a bi-weekly base the turf colour, growth and quality was assessed by independent assessors (qualified and experienced greenkeepers of Royal Curragh Golf Club) who did not have knowledge about which fertiliser was used on which block. These results were collected and analysed monthly using SPSS statistical software.

Fertiliser effect on turf colour was rapid and all treated plots responded with increased colour within a week of application. Colour in all treated plots remained excellent for the months of June, July, August and September with a drop-off during October and a further drop in colour at the start of November. Data analyses determined no significant differences between treatments, however, the mean values for both Mivena products for the full trial period achieved the highest ratings, 8.16 for the Granucote and 8.33 for the GranuPermanent. These data were only observed following the outcome of the full analysis.

Treatment effect of turf quality produced similar results as the colour assessments, in that for the overall trial period the mean data showed quality in all treated plots was significantly better than the un-fertilised controls, with no significant differences between treatments. However, as with the turf colour analysis, while there were no significant differences between treatments, the mean values for both Mivena products achieved the highest ratings, 7.53 for the Granucote and 7.47 for the GranuPermanent. Monthly data analyses did determine some statistical differences between fertiliser treatments in October, with the Granucote treatment significantly better than the Multigreen and controls, and while not statistically better than the other treatments, it did achieve the highest rating, not only for October but for November also. This high rating could be construed as a possible longevity effect from the Granucote input.

Treatment effect on turf growth again was assessed bi-weekly through the trial period and data collated into monthly mean values. Growth in all treated plots improved following fertiliser application and over the full trial period mean turf growth ratings in all treated plots were significantly better than the un-fertilised controls, with no significant differences between treatments. Data analyses determined no statistical differences between treatments in any of the trial months, although all were greater than the controls. As with the turf colour and quality analyses, there were no but significant differences between treatments but the mean values for both Mivena products again achieved the highest ratings: 7.38 for the Granucote and 7.43 for the GranuPermanent.

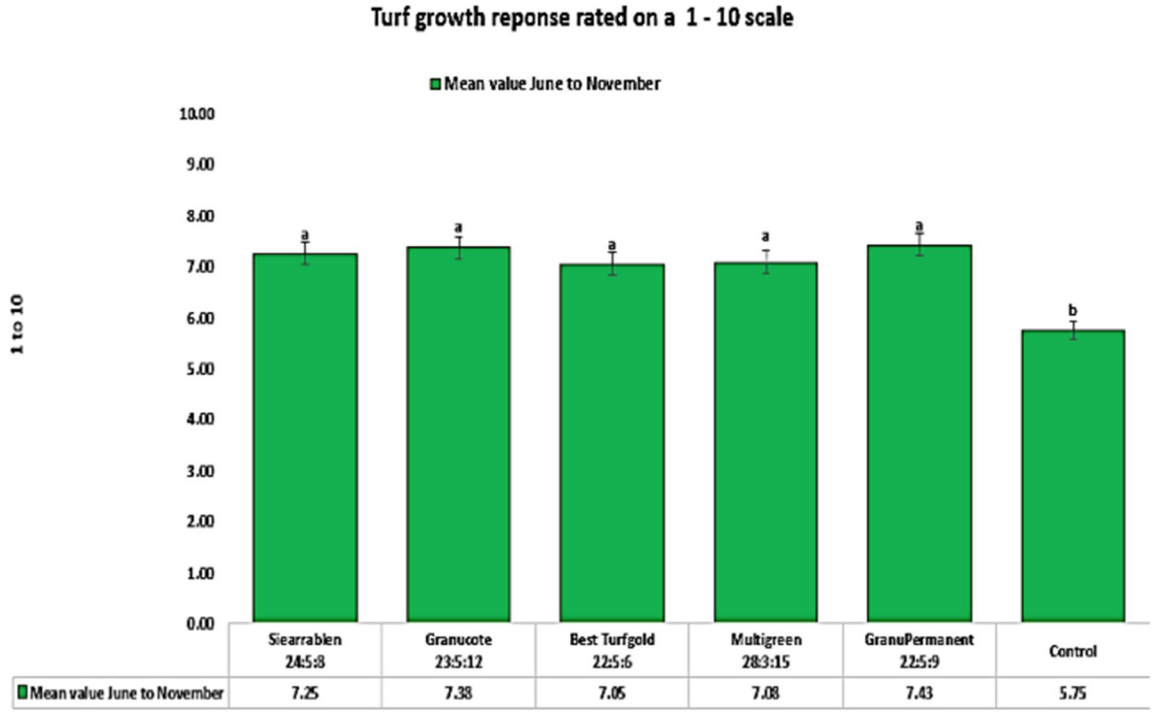


Figure 5 Treatment effect on turf growth response rated on a scale of 1 to 10. Data are mean values for June to November 2016. Bars indicate 95% confidence intervals, letters indicate significant differences between treatments following Dunn's

All fertiliser treatments produced excellent responses in regards to turfgrass colour, quality and growth and statistically there were no differences between any over the trial period with only slight variations between them on a month to month basis. What can be concluded is that both Mivena products produced results equal to all others trialled and while it cannot be stated they were significantly better, the data shows them to have produced higher ratings than other products in the three areas of assessment.

Full copies of the trial report and Mivena fertilisers are available in the United Kingdom through Border Sports Services (www.bordersportsservices.co.uk) and Thorntrees Amenity (www.thorntreesamenity.co.uk)