The Turf Disease Centre

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SAMPLE ANALYSIS RESULT: DISEASE IDENTIFICATION

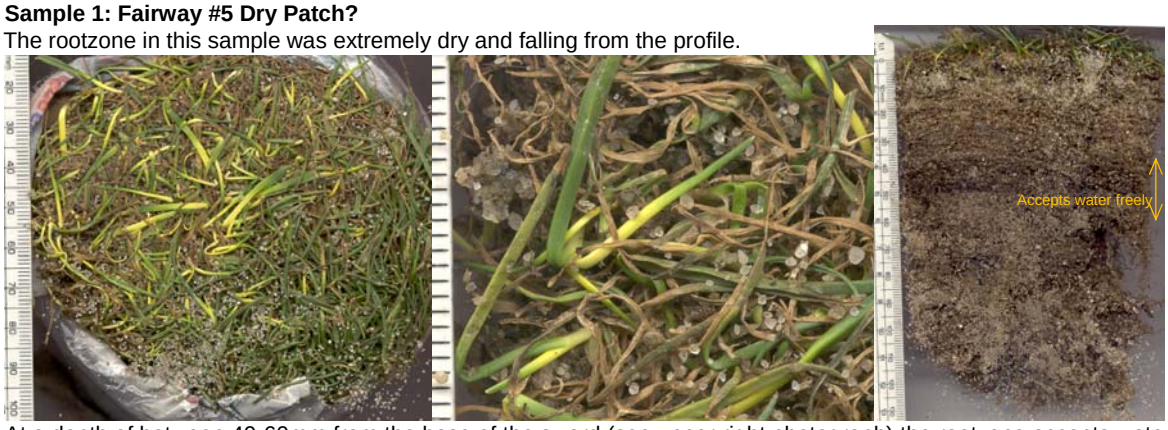
Date received:	09 December 2009	**Sample number:**	SA091202
Sent by:	David Gómez Agüera, Director, Green Section RFEG	**Result to:**	David Gómez Agüera
Sample taken from:	Centro Nacional de Golf, Madrid	**Result delivered by:**	Email
Location:	Fairway 5 & 10, Rough 15	**Number of Pages:**	3

THE RESULT REFERS ONLY TO THE SAMPLE(S) RECEIVED

Five hole changer core samples (labelled 1 to 5) were received for analysis.

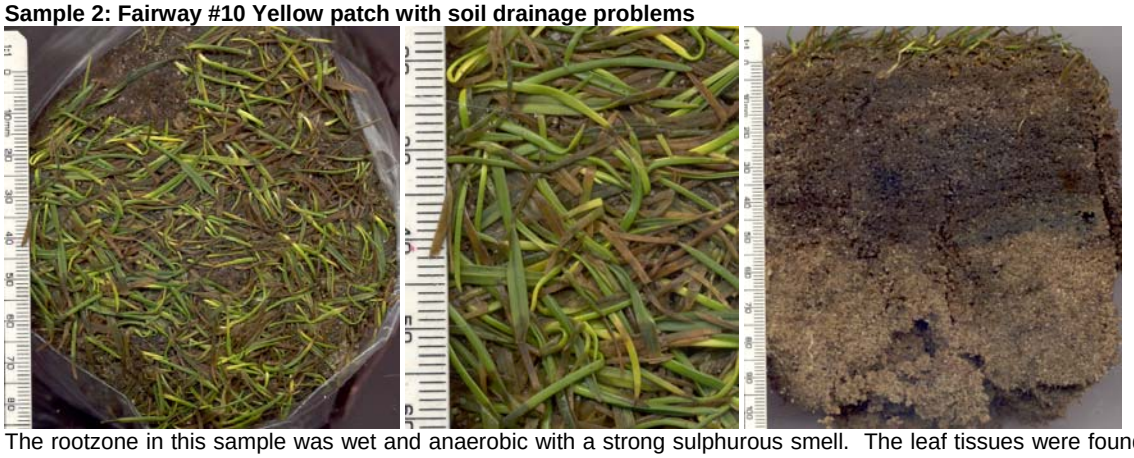
Sample 1: Fairway #5 Dry Patch?

The rootzone in this sample was extremely dry and falling from the profile.



At a depth of between 40-60mm from the base of the sward (see upper right photograph) the rootzone accepts water freely. However, above and below this depth, the rootzone is water-repellent. The leaf tissues in the sample were heavily colonised by the fungus *Leptosphaerulina* sp. and moderately colonised by the fungus *Ascochyta* sp. Although both of these fungi can cause disease in amenity turfgrasses, they are ready saprophytes and it is likely that their presence in this sample is as a secondary infection of the heavily stressed turf.

Sample 2: Fairway #10 Yellow patch with soil drainage problems



The rootzone in this sample was wet and anaerobic with a strong sulphurous smell. The leaf tissues were found to be water-soaked and decaying and an analysis of the tissues showed that they were heavily colonised by the organism *Labyrinthula* sp. This organism is neither a fungus nor a bacterium but it belongs to a specific group of organisms that require conditions of high salinity in which to thrive and cause disease. There was no evidence of any fungal infection in the sample.

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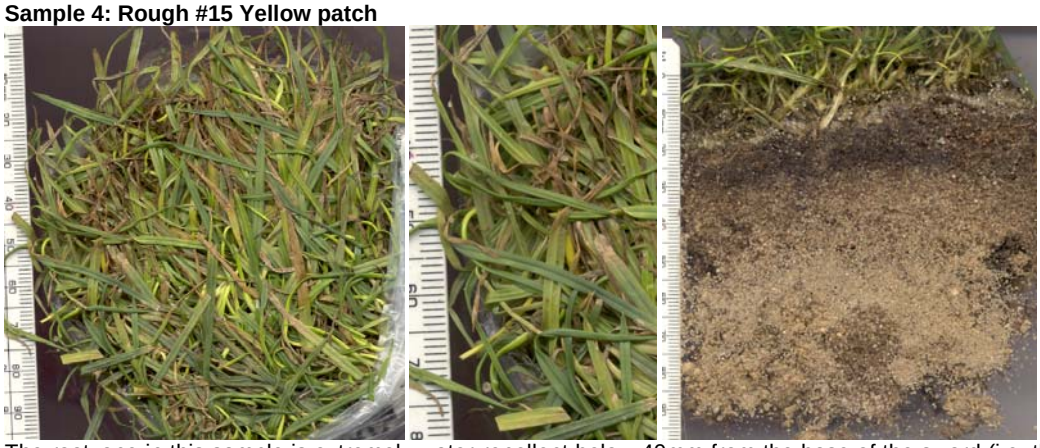
Sample 3: Fairway #10 Green patch

The turf in this sample appeared healthy and there was no evidence of any fungal activity (e.g. basidiomycete fairy ring fungi) that might be causing a green-up in the general turf colour. However, analysis of the leaf tissues showed that they were colonised by the same *Labyrinthula* sp. organism as in Sample 2 and it is likely that if the conditions remain constant, the turf will develop the same Rapid Blight symptoms as presented in Sample 2. There was no evidence of any significant fungal infection in the turf sample.

Sample 4: Rough #15 Yellow patch



The rootzone in this sample is extremely water-repellent below 40mm from the base of the sward (i.e. the top 40mm of the profile accepts water freely but below 40mm, the rootzone repels water strongly). The leaf tissues were heavily colonised by an *Ascochyta* sp. of fungus and an occasional *Leptosphaerulina* sp. fungal infection. Both of these foliar infections are likely to be developing due to the general moisture stress of the turf. The infection is likely to be worst in areas that receive greater amounts of applied water, or where water moves across the sward, because the spores of these fungi will be active and move more easily under these conditions.

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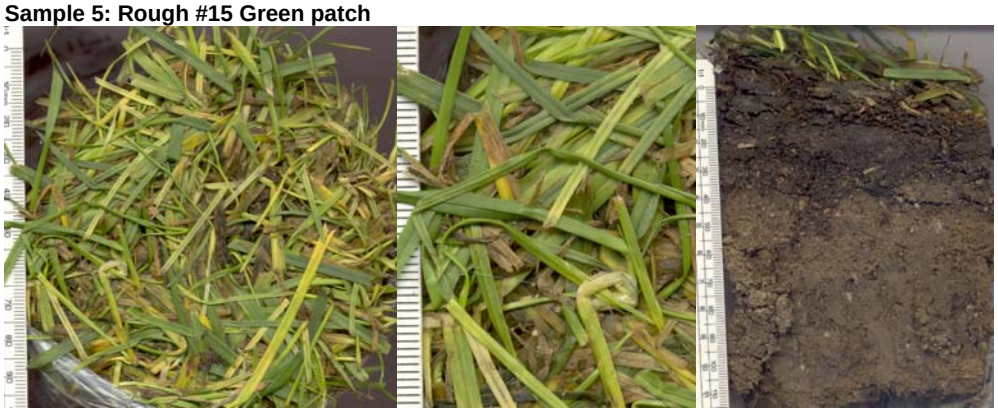
Sample 5: Rough #15 Green patch



Although this sample as labelled as from a green patch, the leaf tissues were noticeably yellowed. That said, there was little significant foliar infection and the plants appeared to be generally healthy (if a little discoloured). Occasional plant roots were slightly deformed in their development and for completeness, I decided to check the rootzone for evidence of any plant parasitic nematode activity. No endo-parasitic nematode species were seen inside the roots but the top 40mm of the rootzone from this sample and from Sample 4 were extracted and filtered over night to determine any nematode presence. No plant patristic nematode activity was identified in either sample. The occasional deformity to the root development is not caused by disease and may not be having any adverse effect on plant growth.