NZ · SPORTS · TURF

INSTITUTE

TECHNICAL
FACT SHEET

F R O S T
"To play or not to play"

Introduction

Each winter and particularly where periods of sequential frosts occur, the issue as to whether play should be delayed (or not) is raised by golfers and the executive.

Frost – what is it?

For the most part within the central North Island region, frosts are comparatively light (a surface frost) and are largely the result of the dew freezing. In this situation, it is generally only the leaf that is affected or that freezes.

However, during very cold winters when either sequential frosts or very "hard" frosts occur, there is a likelihood that the profile (3 – 5mm+) and consequently the crown of the grass will freeze.

Effects of frost

Turf plant

Damage associated with frost is in general more severe on shorter grass. Where the plant is left to naturally thaw, the likelihood of damage to the turf is negligible.

Where the leaf freezes and play occurs, the damage is generally superficial and confined to individual leaves. Within a short period (5 – 7 days) these damaged leaves will be removed with mowing and replaced with new tillers/leaves (depending on the growth rate).

The situation is more severe where sequential frosts occur and particularly where the course is subjected to high player numbers. In this situation the damage is cumulative and thinning of the turf cover occurs over time and is likely to compromise future playability (particularly the trueness/uniformity of ball roll).

Where the crown freezes and play occurs, the damage is more serious and long lasting as individual plants are likely to be killed. This is more likely to occur on *Poa annua* dominant surfaces and the damage will generally persist until spring (or when warmer weather occurs).

Playing Quality

The occurrence of play during frosty conditions is at best a good walk. Frosty conditions inevitably result in a game of chance as opposed to skill, given that the playing quality (ball roll, speed, footing etc) is compromised.

Furthermore, where the turf is damaged, this can compromise playing quality for a longer period of time than the delays associated with waiting for the frost to lift would have.

Managing turf in frosty conditions

For those golf courses that are susceptible to sustained periods of frosts, the following management strategies are recommended.

Fertility

The objective is to "set the turf up" going into winter so as to ensure you have both; full cover and a hard wearing rather than succulent turf plant. Key considerations include:

- For *Poa annua* dominant surfaces a 1:1 → 1:2 N:K ratio is suggested going into winter and maintaining moderate levels of potash during the winter.
- Adequate nitrogen is required during autumn to ensure a full cover is achieved. As temperatures drop (approximately June→) nitrogen applications should be kept to a minimum in order to reduce excessive succulence.

Mowing height

Increasing the mowing height over winter particularly on browntop and creeping bentgrass potentially provides more protection of the crowns and a larger leaf area for recovery.

Thatch management

Managing thatch will assist to provide a drier surface and thereby reduce the severity of damage that can occur to the turf. That is, it prevents water accumulating around the crowns and potentially freezing.

Trees

Any Club management strategy that reduces shade and/or improves air circulation (thinning/removal of trees) around intensively used areas such as greens or tees is desirable. For golfers, the benefits would be reflected in the course opening earlier due to the quicker thawing of frosts.

Wetting agents

Wetting agent may for special events assist to reduce the severity of the frost and hasten the lifting of the frost. However the benefits of such programmes are only likely to be realised where light frosts are experienced.

Summary

As to whether play should or should not occur during periods of frost, the most sensible approach is to delay play until the frost lifts. This ensures that the best playing conditions are provided for golfers both on that day and in successive days or weeks.

If you have any further enquiries relating to this fact sheet, contact your local NZSTI agronomist, or NZSTI Head Office.

Ph: 06 356 8090 ▪ Email: turf@nzsti.org.nz ▪ www.nzsti.org.nz