FAIRY RINGS

Fairy rings are seldom a problem on actively used sports fields but can be an unsightly infringement into the park areas and on club house lawns. They generally appear as circles of dark green grass with dormant or dead grass on the inside of the dark green ring. After rains, mushrooms, the fruiting body of the causal fungi, may appear in the circle of dark green grass.

The fungus mycelium grows only outward from the centre. The advancing margin of fungus is actively growing while the receding margin is dying. The stimulation of the grass in the advancing circle is due to the amount of nitrogen made available to the grass by the fungus as it breaks down organic matter in the soil. As the fungus mass grows in the soil it results in a desiccation of the grass, hence the brown appearance.

There has been no easy or inexpensive control generated for the condition. BenoDanil has been reported to give reasonable, but inconsistent results if used at high rates and thoroughly drenched into the soil. This is because the fungus deeply penetrates into the soil.

An environmentally friendly control method suggested by some turf managers is to excavate the soil from the surface below the brown area of the ring and spread if outside the advancing ring. The theory is that the soil contains high concentrations of mycelium which contains a compound toxic to their further growth. When the soil is spread outside the advancing ring the toxin in the soil prevents further advance of the fungus.

A recent article published in the New Zealand Turf Management Journal suggests the application of potassium carbonate may eliminate fairy rings in turf. Potassium carbonate is applied at 0.9 kg of material/100m$^2$ for two applications spaced two weeks apart. The potassium carbonate seems to work best when applied in spring or early summer when the rings first appear.

The key to success with this treatment appears to be to water the material well into the soil immediately after application to prevent foliar burn due to its high salt index. In addition thorough watering moves the chemical to greater depths as the fungal filaments are located well below the surface soil. Application by dissolving the potassium carbonate in cold water and applying through a boom sprayer is recommended.

Potassium carbonate (K$_2$CO$_3$) is a powder containing 57% K$_2$O (0 - 0 - 57). It is alkaline and caustic, so care must be taken to prevent the powder or liquid from splashing onto the skin or into the eyes. Adding the powder to water creates heat. DO NOT use hot water or add water to the powder. Add the powder slowly to cold water, otherwise violent boiling will occur.