

Preparing for Increasing Fuel Costs

INTRODUCTION

The cost of fuel continues its upwards spiral and this trend looks unlikely to change. This has consequences for both the maintenance and finances of New Zealand golf clubs.

Fortunately, at least at present, the high NZ dollar provides some “cushioning” for golf clubs against the rising cost of fuel. However, a dip in the value of the NZ dollar will further affect the cost of fuel and therefore maintenance costs.

For clubs concerned by high fuel costs, it is timely to review current maintenance practices and playing standards to ensure that:

- Practices are sustainable for the foreseeable future.
- The focus is on playing performance as opposed to providing lush green playing surfaces.
- Maintenance inputs are minimised without compromising playing quality.
- Maintenance optimises performance/results obtained from the fuel used.

The main areas where the cost of fuel will directly impact on club finances are:

- Cartage of materials.
- Purchase of products and in particular fertilisers, pesticides etc.
- Running of maintenance machinery.
- Travel by members to use the golf course.

STRATEGIES FOR OPTIMISING THE PERFORMANCE OF FUEL

Each golf course is unique, with respect to their finances, growing environment, members' expectations and maintenance standards. Although some of the agronomic concepts raised below will undoubtedly be contentious, they offer potential savings by reducing the area that is maintained and the resources required.

Maintenance Levels

The norm on most golf courses in New Zealand is that all/most of the grassed areas on the course are mown frequently (generally weekly or less), this despite significant areas of many golf courses not actually being part of the intended playing area. Consequently any strategy that looks to either reduce the area being maintained or that lowers the intensity of maintenance has the potential to provide savings for the club.

The first step in the review process is for the club to complete a course policy document, which, as part of its contents, would identify the maintenance required for each area on the golf course (greens, tees, rough etc) and where appropriate identify those areas that could receive minimal (if any) maintenance. Inevitably, and depending on the feedback from members, some fine tuning of these areas will be required.

Grass Types

Grass selection is critical. Golfers' desire for lush green immaculately presented playing surfaces has resulted in *Poa annua* dominating many greens, surrounds and fairways. Although *Poa annua* can and does provide high quality playing surfaces, significant resources in the form of fertiliser, water, topdressing, pesticides, mowing, grooming etc are required.

Clearly, if your club wishes to minimise cost and provide a more sustainable playing environment, there is a need to re-evaluate the grass types that are grown and to get off the "treadmill" that requires more fertiliser, topdressing, watering, mowing etc. In other words, we need to look at the practices adopted by our pioneer turf managers that concentrated on using the least amount of resources, slowing growth as much as possible, yet still being able to prepare a high quality playing surface.

Table 1: A comparison of inputs required for NZ browntop and *Poa annua*

COMPARISON OF BROWNTOP/POA ANNUA'S REQUIREMENTS		
Input	Browntop	<i>Poa annua</i>
Fertiliser		
Nitrogen (Kg/ha/yr)	< 170kg/ha/year	> 220kg/ha/year
Potassium (Kg/ha/yr)	< 40kg/ha/year	> 220kg/ha/year
Phosphorous (Kg/ha/yr)	< 12 kg/ha/year	> 25kg/ha/yr
Water	Approximately 60 – 80% daily evapotranspiration rate	Approximately 95 – 100% daily evapotranspiration rate
Sand	< 135m ³ /ha/year	> 180m ³ /ha/yr
Greens, collars, approaches		
Fungicides/Insecticides	5 – 7 applications/year	> 14 applications/year
(approx applications/year in the upper North Island)		
Fuel ¹	Approximately 10 – 20 % savings over <i>Poa annua</i> .	
¹ This estimated fuel savings is based on the reduced maintenance requirements necessary for managing browntop (i.e. mowing, fertiliser applications, pesticide applications, sanding etc).		

The key with grasses is to clearly document (policy document) the grass type(s) that will be maintained in the different areas of the golf course. This approach reduces potential conflict from members, provides a clear focus for management and reduces the risk of deviating from the proper turf species.

Capital investment

For some situations, such as fairways, rough etc, it may be necessary to invest in establishing more desirable, lower input grasses such that savings for materials, mowing etc can be recovered with time. NZSTI can assist clubs with grass selection and completing feasibility studies that detail the options and costs available for your situation.

Records

Changes will not happen over night and, in order that informed, meaningful adjustments can be made, detailed planning and records are required. This allows areas for improvement to be identified and the results of any change to be monitored (see “Sustainability” fact sheet).

Standards

Not unexpectedly, playing conditions and the standards expected by members have risen over time. Typically these improvements have evolved and have not always been documented or appreciated by the club.

For example:

1. Green speed – the trend for yet faster greens (>9-10feet) has seen both lower mowing heights and an increase in the mowing frequencies (from 3-5x/week to 7x or more/week). Consequences in many cases have included:
 - A change from browntop to *Poa annua* dominant surfaces.
 - Clubs getting themselves onto the treadmill i.e. more fertiliser is required for recovery/green surfaces, which then creates more growth and consequently the need for mowing, topdressing/renovation and so on.
2. Extending the maintenance plan to include either the green collars (2.0m) or green surrounds (5-7m) is the equivalent of an additional 36% and 100% (approx) in area respectively, which is intensively managed.
3. The trend of improving the quality of the fairways results in an extra 12-15ha that needs to be resourced.

Although contentious, as resources become more expensive a more sustainable and realistic outlook will likely be required by golfers as to their expectations of the golf course.

The suggested approach is for clubs to:

- Document the playing standards or expectations of each of the playing areas on the golf course.
- Ensure that these standards are achievable with the current resources available to the club.
- When changing (improving) playing conditions, being fully aware of the direct and indirect costs associated with these changes.

Other Strategies

Other considerations include:

Tree planting patterns

Areas which are out of play and, providing turf quality is not compromised, are candidates for re-vegetation with native or exotic plants.

Cluster or specimen plantings are suggested within the rough and for strategic areas on fairways. The ad hoc planting of trees can create unnecessary work or inefficiencies when mowing the grass in these areas.

Fertility “Acid theory”

Regrettably, agricultural fertiliser practices (primarily lime and phosphate) have unnecessarily been implemented on many golf courses and in particular low wear areas such as fairways, roughs creating excessive fertility and growth.

It is essential to differentiate between agriculture/horticulture, where the objective is to maximise production (growth), whereas for turf we want the least amount of growth necessary to maintain turf density and playing standards. Raising soil fertility makes slow growth difficult to achieve. The best policy is to avoid liming and excessive fertiliser applications in the first place.

Options to revert to a lower fertility environment include:

- Time – Natural soil processes will (generally) over many years result in a more acidic lower fertility soil (re)developing.
- Mining the fertility through the removal of clippings, particularly on the rough and maybe fairways is a consideration.
- Where conditions allow, consider the use of a sulphur programme to re-acidify the profile and “lockup” the fertility.
- Resurfacing is an option in some situations, i.e. removing or diluting the fertile surface soil layers with deeper infertile soil layers.

Growth regulation

More trialling is required to determine the cost effectiveness of growth regulators. Presently;

- Metsulfuron is routinely used for broadleaf weed control (excluding ryegrass turf) and has the added advantage of suppressing growth for approximately 6 weeks following spraying. Anecdotal evidence suggests this growth suppression may save a cut/week for this period.
- Moddus – International evidence indicates that Moddus can potentially reduce mowing requirements by approximately 50%. Potential exists for its use on rapidly growing grasses such as Ryegrass, Kikuyu, Couch and/or targeted applications during known growth flushes to reduce the mowing frequency required.

Machinery

The importance of the operator and how machinery is maintained can have a significant impact on fuel consumption.

When looking to reduce the increasing costs associated with fuel, the key messages are:

- i. Golf clubs should have a course policy document which clearly documents the playing standards, maintenance intensity and grass species for each area on the golf course.
- ii. At some point, clubs need to “place a line in the sand” as to the quality of surfaces that they can consistently afford to provide for their members, both in the short and longer term.
- iii. When changing standards, clubs need to fully consider the direct and indirect costs associated with achieving this and consequently the appropriateness of any given improvement in playing quality. This is particularly important with access to one-off grants from Pub charities and other funding bodies, whereby the capital cost is covered, but the on-going maintenance costs are not accounted for.

