



Grinding Workshop for Greenkeepers and Groundsmen

A group of greenkeepers and groundsmen were recently treated to a free workshop. The topic of discussion was to be the performance of mowers and their cutting units.

The workshop was presented by Bernhards, using a Toro fairway mower that had been provided courtesy of Devon Garden Machinery.

The trial began in the machinery workshop, examining the performance of some cutting units on a mower that had been set up with blunt blades which had contact with the bottom blade. Then we compared them with the some other cutting units that had been re-ground and set up to have a very light contact between cylinder reel and bottom blade.

Firstly we appraised the mower that had been set up with a heavy contact, tight to the bottom blade. Then we proceeded to dip the fuel tank and measure the amount of fuel recording evidence to later quantify fuel economy.

The group then headed off to one of the college football pitches to view the mower cutting one half of the pitch. With the damp Cornish weather setting in the pitch was mown and timed. The mower had its boxes on so that we could measure the volume of grass mown from each cut. The clippings were placed in a bag and then weighed.

The results recorded from the mower set up with a heavy contact were as follows:

- 25 kilos of grass clippings measured from the boxes (wet)
- it took 13 minutes and 2 seconds to mow
- 2.4 litres of fuel were consumed (calculated by refilling the fuel tank to 60 litres and measuring the volume that went back in)

The clippings were then viewed under a macro scope and appeared yellowy in colour at the tip where the cut had been made, and also visible was a serrated edge proving the poor cutting action.

The group was then given a grinding demonstration using the Anglemaster Bedknife Grinder, and then the Express Duel Reel Grinder. All five units were then ground to the manufacturer's recommendations. The fuel levels were checked to guarantee the same amount of fuel as before when the first cut commenced. It was then back up to the football pitch to view the other half being cut, luckily by this time the weather conditions had improved. We went through the same process as earlier in the day, except with the mower re-ground and set up with a light contact.

The results for the second test are as follows:

- 21 kilos of grass clippings measured from the boxes. (the less weight could be due to a drier cut meaning less moisture in the grass leaf)
- it took 12 minutes and 52 seconds
- 1.5 litres of fuel was consumed
- Once viewed under the microscope the cut appeared a lot cleaner

So we learnt that a sharp mower with less contact performs better because it gives a cleaner cut that leads to a healthier plant promoting a less disease prone sward. The mower took 10 seconds less than earlier in the day probably because of less contact from the cylinder blades to bedknife making the engine work harder.

This probably lead to the most significant finding which was the amount of fuel consumed, 33% less than in test one.

In the current climate of high fuel prices it goes to show how much more economic a sharp and correctly set up mower can be, not to mention the benefit in agronomics terms!

This was a thoroughly enjoyable day from which everybody took something away, so a big thank you must go to Duchy College, Bernhard Grinders and Devon Garden Machinery.

Gavin Moore, of Launceston Golf Club