

HOW LOW MAINTENANCE GRASSES ARE REDUCING CARBON EMISSIONS

By Maureen Keepin

Two highly emotive subjects are climate change and the impact on the environment from carbon emissions. And turf grass breeders are seeking solutions to these by introducing cultivars with slow re-growth characteristics and reduced clippings yield.

Helping to reduce the impact upon the environment these grasses are proving vital and grass seed development manager at Rigby Taylor, Stephen Denton, said: "This is an important factor clubs and councils should consider when selecting mixtures for use on areas that are either difficult to maintain to a given standard or involve high machinery use."

Grass is vital to our wellbeing. Through photosynthesis, turfgrass and other green plants take in carbon dioxide and water. Using the power of sunlight, the plants then release oxygen back into the atmosphere. Scientific studies have shown that 25 square feet of turfgrass can provide enough oxygen for one person for an entire day. And impressively golf courses can provide enough oxygen for an entire neighbourhood.

CLIPPINGS YIELD

Clippings trials undertaken at Top Green's trial station in Les Alleuds France have been looking at how reducing clippings and the subsequent reduction in mowing frequency can affect carbon emissions.

Looking at both high and low Nitrogen input situations; yields were collected, measured and recorded. Results taken from the two situations revealed that an average clippings yield of 6.5 tonnes was produced per hectare of area.

There were significant variations between both species type and variety. The graphs below demonstrate results from the trials carried out.

These two tables look at an Environmental impact study on clippings yields both for individual species and a mixture.

It can be seen from table 1 that tall fescue produces over nine tonnes of clippings whereas perennial ryegrasses produce under four tonnes. A mixture produces about 6.5 tonnes.

While tall fescues produce higher than average clippings yields, benefits from their exceptional drought tolerance and reduced water consumption requirements of only 25mm of water per annum need to be considered for future water conservation needs.

In table 2 we looked specifically at ryegrass varieties and found that Greenflash produced

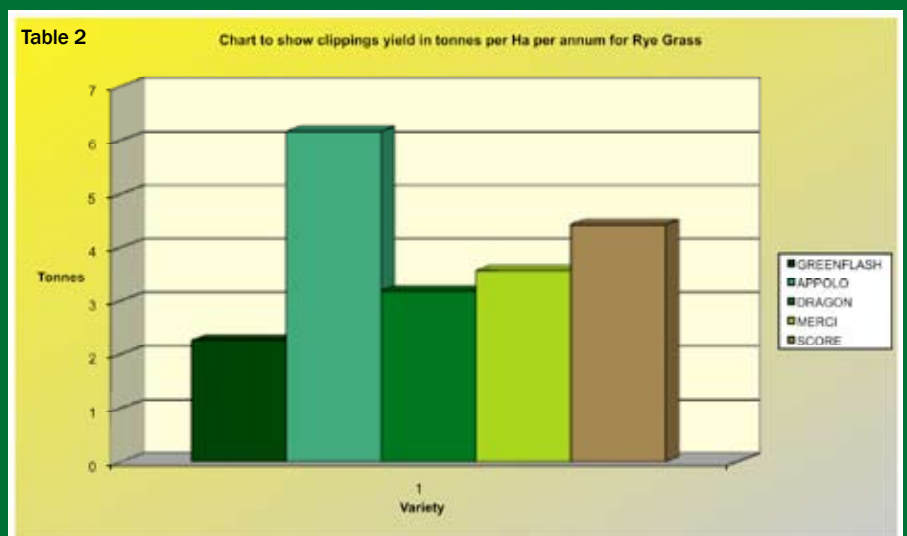
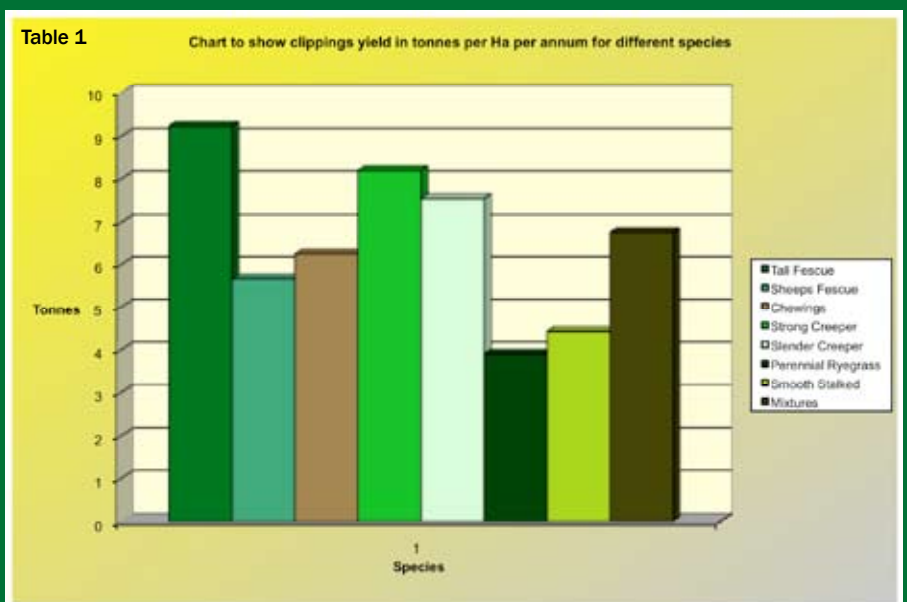
2.27 tonnes of clippings per annum, the lowest amount of clippings of those tested.

The worst varieties produced 7.32 T/ha.

The best variety in trials Greenflash produced 1.56 T/ha.

The difference between the best and worst varieties was 5.76 T/ha.

As it costs on average £40 per tonne to dispose



GREAT GRASS

In our towns and cities we use grass for golf courses, sportsfields and amenity areas.

Stephen Denton, Grass Seed Development Manager at Rigby Taylor commented: "We often take these sites for granted. We should not, as grass fulfils a highly complex role in the urban ecosystem."

It is vital for life as one hectare of grass produces enough oxygen for 150 people to breathe.

And grass contributes significantly to carbon sequestration through CO² capture in the grass species.

of clippings the savings that can be made over a year per hectare are substantial = £230.

The results from grass cutting trials undertaken by Richard Barton and his team at Torbay Council are impressive. He has reduced his cuts from seven or eight per year with a traditional MOT mix to three or four on a new low maintenance mix incorporating these new varieties. This produces savings in time, labour, wear and tear on machines and fuel costs - plus the added benefit of reducing the council's carbon footprint.

These results are more impressive, given the wetter weather conditions experienced in 2007, which resulted in a significant increase in grass growth.

When looking to cost out a maintenance regime for any given grass area on a golf course, from fairways, tees to roughs, or public playing fields, or roadside verges, knowing what grass seeds you have is all-important. By using these new variety mixtures a dramatic difference can be made to the turf manager's budget and also in a small but significant way improvements made to our environment.



Stephen Alderton at Les Alleuds trial grounds

Further benefits of grass include:

- Filters dust and particles from the air which is extremely important for golf courses and parks in urban situations.
- Grass, together with other plants, helps to regulate the temperature.
- Parks and gardens benefit as grass acts as a filter, absorbing rather than reflecting noise.
- Helps to filter water into the water table thereby helping to avoid flash flooding and runoff.
- Slower growing cultivars help to lower maintenance costs and reduce the carbon footprint.
- Reduced clippings saves on disposal costs and the impact on the environment.
- Greater drought resistance gives great looking grass without using our valuable water resources.
- Quicker establishment provides greater protection from soil erosion.
- Cultivars more able to cope with waterlogged conditions give greater stabilization and improved grass cover.
- An increased ability to withstand windchill provides greater growth throughout the seasons and a more even and harder-wearing sward.



HOW TOP GREEN CUTS ITS CARBON FOOTPRINT

A new grass seed production regime set up by the Top Green group has put in place a five-year field rotation cycle which produces little CO² emissions and optimizes production.

First year cereal is planted – second year clover – third, fourth and fifth years grass seed.

Direct drilling techniques in the second and third years means less CO² is lost from the soil through ploughing - as ploughing kills humus through burying it.

Company objectives of this grass seed breeder include reducing the carbon footprint at the seed production stage, through to field production, on to the end-user and the landscape.

For further information on grass seed selection contact:

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