Pasture Profit Index — choosing the correct varieties for my farm

Tomas Tubritt, Michael O'Donovan and Noirin McHugh
[1]*Teagasc, Animal & Grassland Research and Innovation Centre, Moorepark, Fermoy, Co. Cork*

Summary

- Key traits in the PPI are seasonal dry matter (DM) yield, grass quality, silage yield and persistency.
- There is a large range in PPI values (€/ha/year) between the highest (€214) and lowest (€66) varieties.
- Farmers should carefully choose varieties appropriate for their requirements when using the PPI.
- Grazing efficiency is a new trait being investigated for incorporation into PPI.

Introduction

Current grass utilisation on dairy farms in Ireland is estimated to be about 8 t grass DM/ha. Data from PastureBase Ireland shows that the top dairy farmers are utilising more than 10 t DM/ha/year, indicating that there is significant potential to increase grass growth and utilisation on most farms. A key management factor used by farmers achieving high levels of grass utilisation is regular reseeding. The Pasture Profit Index (PPI) was introduced to the Irish grassland industry in 2013 after many years of focussed research and refinements to Department of Agriculture, Food and the Marine (DAFM) evaluation protocols. The PPI sets out, in economic terms, the agronomic differences in traits between grass varieties to allow farmers select the most appropriate varieties for their farm.

Using PPI to select grass varieties for your farm

The PPI enables the identification of grass varieties which provide the greatest economic contribution to a ruminant grazing/silage system. The PPI ranks grass varieties based on their economic benefits and will ultimately result in an increase in the use of superior varieties, which means higher profitability for the industry. The key traits in the PPI are seasonal DM yield (spring, summer and autumn), grass quality (DM digestibility), silage yield and persistency. All varieties on the PPI Recommended List are evaluated by DAFM and have a minimum of two years agronomic data generated before the PPI is calculated. The relative emphasis on each trait is as follows: grass DM yield (31%), grass quality (20%), silage yield (15%) and sward persistency (34%). For each trait, varietal performance is expressed relative to the base value for all varieties. Variety performance above or below the base is then multiplied by the economic value for that trait giving the PPI value for that trait. Total PPI for each variety is the sum of all the traits. In 2019, this ranged from €214 to €66/ha/year (Appendix 1). The sub-indices allow farmers select varieties for specific purposes. Desirable traits for each system are displayed in Table 1.

Table 1. Desirable variety traits for grassland systems

Grazing swards	Silage swards	Mixed swards
High quality index	High silage index	High quality index
Good seasonal growth	High spring growth	High silage index
Good graze out results	Persistency	Good graze out results
+ Clover		

Grazing efficiency

Grazing efficiency is a new trait currently being evaluated at Teagasc Moorepark. Varieties with good grazing efficiency are desirable as they are grazed tightly by cows, maintain their quality throughout the season and reduce the requirement for topping. At each grazing event, the post grazing residual sward height (PostGSH) achieved of each variety plot was measured with a rising plate meter. To accurately assess grazing efficiency, the PostGSH of each variety was predicted accounting for pre-grazing sward height, grazing interval and year. 'Residual Grazed Height' (RGH) is a measure of varietal grazing efficiency. The PostGSH achieved minus the predicted PostGSH gives us the RGH figure. Varieties with negative RGH values are desirable as they have greater grazing efficiency. This study identified that nearly all tetraploids had negative RGH values indicating that they have improved grazing efficiency over diploids. This work indicates that increased proportions of tetraploid varieties should be sown in grazing swards. Increased levels of OMD and increased leaf proportion are shown to improve the graze out performance of grass swards. Figure 1 shows the level of OMD for each variety trialled at Teagasc Moorepark over the last two years. Grazing efficiency will need to be included as a trait within the PPI in the future.

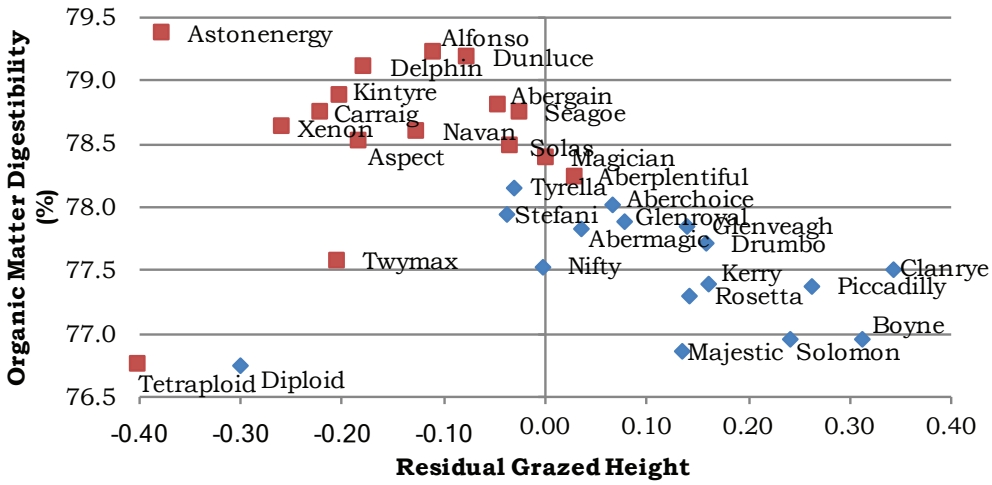

Figure 1. *The relationship between levels of Organic Matter Digestibility (%) and residual grazed height.*