

Case study 37

Tyfon for summer grazing and green manure inputs

The overall effect on farm profit (net farm income) is positive:

Net benefit = £146/hectare yearly after 8 years (including FYM application costs). This benefit applied to 5 hectares of land annually where Tyfon is grown to ensure a source of good summer grazing for dairy cattle in occasionally drought-prone pastures. Where not entirely grazed, the Tyfon is ploughed into the soil prior to reseeding with short ley Italian rye grass.





Background

This family-run farm has intensively managed mixed livestock and dairying producing 1 million litres of milk a year from a herd of 170 Holstein x cattle on around 100 hectares, with a number of beef cattle and sheep on overwintering grazing let. Soils are silty clay loams over gritstone. Rainfall is high (more than 1,200 millimetres). This case study focuses on the use of the brassica-cross Tyfon for green manure and summer grazing.

The farm has around 50 ha of permanent clover pasture on steep fields and 50 ha of more intensively managed grass/clover fields, which are reseeded every 5 years. Five hectares are part of an arable rotation that includes 1 year in a fodder crop, which since 1999 has been the brassica-cross Tyfon. In the 2 following years the arable fields are in a short-term pure Italian rye grass ley.

Tyfon, a brassica developed for summer grazing, is very drought resistant. The farmer values the summer grazing on this farm, which can be prone to mid-summer grass shortage, as saving up to 2 months of supplementary feeding. As soon as the dry spell has passed, cows can be taken off the Tyfon and it can be ploughed in. Another advantage of growing Tyfon is that it provides a route for applying FYM in the spring where it can be incorporated so that it does not wash off. Previously, old heaped FYM was applied to fields being reseeded in autumn.

Soil organic matter management

Soil organic amendments:

- While the leaves are grazed off, the bulbous tuber and large tap roots return more plant residues to the soil than many other fodder crops.
- When the Tyfon is not fully grazed during a summer grass shortage, the crop is ploughed in before autumn rye grass sowing.
- These fodder fields also have grass ploughed in every three years.
- All the FYM from the farm is applied at 40 tonnes/ha to 5 ha of Tyfon as opposed to being heaped, loaded and spread to fields being reseeded in the autumn.

What difference has organic matter management made?

Benefits:

- The soil structure on these fields is good, with high rain infiltration and good grass yields.

- In the spring following Tyfon, no inorganic N fertiliser is needed on grass, saving 60 kilograms of N applied before 1st cut on the rest of the grass.
- The cost of autumn FYM spreading is saved. Moreover, spring-applied fresh FYM has approximately three times the N content available to the crop compared with autumn-applied FYM.
- Tyfon is broadcast sown, so unlike spring cereals it doesn't need tramlines in the crop.
- In a wet spring, having fields going into Tyfon provides useful early season grazing, which can tolerate some livestock poaching as they will shortly be ploughed before Tyfon is sown at the end of April. This can help get the cows out up to 2 weeks earlier than would otherwise occur.
- Tyfon provides good grazing value for the milking herd, sustaining good milk yields when grass is scarce in mid-summer and requiring no inputs other than the organic manures applied prior to broadcast. This is worth up to 2 months of supplementary feed in a dry year, at least 1 month in an average year.
- The ease of managing Tyfon in strip grazing helps ensure cows can be diverted onto grass when it becomes available.
- Where the Tyfon is left as a standing crop at the end of the season, this provides income through the Entry Level Stewardship rotational option "Brassica fodder crops followed by over-wintered stubbles," aimed at providing overwintering bird habitat, worth 90 points/ha. For this area, the standing crop can be ploughed in after the following 15th February.
- Tyfon can also be autumn grazed for lamb fattening, although this is not done on this farm at the moment.

Costs:

- We take into account cultivation costs, in this case 2 passes with a Dutch harrow, and the cost of rotation to chop up the bulbous root.

Comment

The overall effect on farm profit (net farm income) is positive: Net value (including slurry and FYM application costs) = £146/ha yearly after 8 years.