www.cotswoldseeds.com
Tel: 01608 652552

Cotswold Seeds Ltd
The Cotswold Business Village
Moreton in Marsh,
Gloucestershire GL56 0JQ

# Surveying Sainfoin

Cotswold Seeds is involved in an EU funded project to reintroduce forage legume sainfoin and recently conducted a survey among British farmers to explore opinions and usage.

Sainfoin, a perennial forage legume, was introduced into British agriculture in the early seventeenth century and was an important component of sustainable farming systems in most parts of Europe for well over four centuries. Agricultural pioneer Arthur Young described it as a 'noble crop' and the Duke of Marlbrough grew it at Blenheim and found that it yielded 'the very best hay'. Things changed though, with the advent of cheap nitrogenous fertilizers in the second part of the twentieth century and this, coupled with lower yields obtained from sainfoin compared to other forage crops and problems of establishment and persistence in mixed swards contributed to sainfoin becoming a second choice forage legume for many farmers in more recent years. By the 1980's it had almost completely disappeared in the UK and seed production was estimated at only 2 tonnes.

However, there is a revival of interest in this forage crop which has drought tolerant properties and grows well on thin soils over chalk. Other benefits are that it has moderate tannin concentration, believed to prevent excessive and wasteful degradation of feed proteins in the rumen and also confer anthelmintic and anti-bloating properties. The European Union is funding the promotion of sainfoin to the tune of €3 million through the Healthy Hay project and €4million for the current LegumePlus project, in which Cotswold Seeds is involved.

As one of the primary commercial associate partners, and being a seed merchant, one of our roles is to highlight the relevance of the project to the future of UK agriculture, advising farmers on how best to use the information to their benefit.

To that end, a survey was recently conducted amongst our customers to take stock of past and current knowledge and perceptions of sainfoin. The 170 questionnaires returned were analysed by researcher Blasius Azhunwi, seconded to the University of Reading, and make interesting reading.

Asked firstly how they grow their forage crops, most (64%) of the farmers reported growing forages in mixtures, the most popular being Italian ryegrass and red clover and also Italian ryegrass and white clover.

Farmers were then asked to rate the different forages on a five

point scale according to economic, agronomic and nutritional traits and some interesting patterns and trends emerged from this, such as a high rating of sainfoin and other legumes for palatability and animal performance and low input requirements for growth of most legumes.

When it came to the production and use of sainfoin, of the 17% who indicated that they were growing it, most (86%) indicated that their parents never did so, indicating an upward trend. The vast majority (83 %) are planting sainfoin in mixtures with other forage crops.

On the question of how long sainfoin fields lasted, nearly half, 41% of farmers, indicated between 2-3 years. Quizzed on how many cuts of sainfoin they take per growing season, the majority (48%) took 2 cuts. Apart from just 2 farmers who mentioned problems of 'mildew and weevils' or 'pigeons in winter', the majority of the farmers did not report any pests or diseases on sainfoin. For yields obtained from sainfoin fields, 27% of farmers each mentioned either having between 8-10 tons ha-1 or lower than 8-10 tons ha-1. Sainfoin is fed to animals as silage by 19 farmers, grazed as fodder by 12 farmers and as hay by 11 farmers.

Amongst sainfoin growing farmers, the high nutritional value of the plant was indicated as the main reason for growing it. Advantages listed included its palatability, increased animal growth rates, good for cattle and lamb fattening, high feed quality and value, increased variety in feed plus high mineral and protein content. Its favourable agronomic attributes came second with 20 farmers describing these in terms of high drought tolerance, nitrogen fixing ability, high yields, growth on shallow soils and suitability to dry soils.

Animal health reasons were also mentioned with the antiparasitic (anthelmintic) and anti-bloating potentials of sainfoin being highlighted. Ecological reasons were also advanced by some as being the reason for growing sainfoin. This was expressed in words like 'great insect value', to reduce reliance on cereals, build soil organic matter, reduce methane and encourage diversity. On the future of sainfoin growing, amongst the 29 farmers growing it, 72% indicated either maintaining the same level or increasing the area under cultivation.

We are also interested in the views of farmers who are not growing sainfoin. Climatic reasons stood out clearly as the primary reason with 76 farmers mentioning the acidic nature of their soil or wet, waterlogged and heavy soils and high rainfall area. Agronomic reasons were mentioned by 19 farmers in responses of low establishment and persistence problems as well as its relatively lower yields compared to other forage legumes. Economic and management indicators were also highlighted by 19 farmers with seed costs and issues about sainfoin not suiting their management system also mentioned.

Asked about what will make sainfoin become a more attractive

legume to those not yet growing it, farmers were very categorical on the need for adapted varieties. This was expressed in responses for varieties that are longer lasting, faster establishing and higher yielding as well as for better ensiling varieties.

Our estimate is that less than 200 hectares is presently under sainfoin cultivation. By every standard, Sainfoin is still a minor forage crop. However indications are that this will change and sainfoin is likely to play a much larger part in farm businesses in the future if plant breeding leads to higher yielding, faster establishing, longer persisting and better ensilable varieties.

In particular studies on the persistence of sainfoin in mixed swards have shown that proper choice of companion grass species and appropriate cutting regimes can all contribute to prevent sainfoin from being outcompeted in a mix sward.

We've long been interested in the potential of sainfoin at Cotswold Seeds. Robin Hill founded Cotswold Seed in 1974 and at that time the acreage of sainfoin had hit record lows.

Robin and others including Dai Barling Senior Lecturer at The Royal Agricultural College, and Jimmy Walwin and Douglas Dash, directors of former seedhouse Townsends of Stroud thought this change was a mistake but their views were shunned by a modern agricultural community intent on pushing the boundaries of intensive farming where yield was paramount. So we're delighted that the EU is now backing sainfoin so strongly.

Fortunately, those who believed sainfoin to be of value continued to protect its future. Small areas of the crop were kept at Great Barrington, Brize Norton and Hailey in Oxfordshire and although those no longer exist they proved a lifeline with seeds having been carefully saved which are now being multiplied under controlled conditions at Cotswold Seeds breeding and research facility and are part of our increasingly popular Sainfoin Four Year Cutting and Grazing Crop mixture. Henry Edmonds has also maintained stock on Hampshire Common.

This is the classic mixture of sainfoin and grass which is used as a temporary ley. For general use we recommend a mix with non-competitive grasses. The grass fills the base of the crop, increases yield and soluble sugars to improve silage fermentation. A sainfoin ley should be managed carefully. Sainfoin produces a cut of silage in early June. Hay may be taken if preferred. Sainfoin should be cut during early flowering but may be delayed without much loss of feed value if needed. Regrowth is less than for the first cut and may be cut again or grazed. Grazing should be light and quick to avoid damage to the plant. Never set stock it or it will become thin. Sainfoin seed can be undersown to spring cereals or direct drilled in April or May at around 30mm. (If undersown the cereal sowing rate should be reduced to 100 kg per hectare.) The grass seed element, which is supplied separately, should then be surface sown and rolled in.

Two hundred years ago, sainfoin grew on one in seven fields in the Cotswolds and we firmly believe that farmers would benefit

from this being the case once more.

http://legumeplus.eu

Contributors: B.N. Azuhnwi, A. Bailey, H. Hoste, I. Mueller-Harvey, P. Totterdell.

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Author: Ian Wilkinson MD Cotswold Seeds
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