Working Together for Organic Oats

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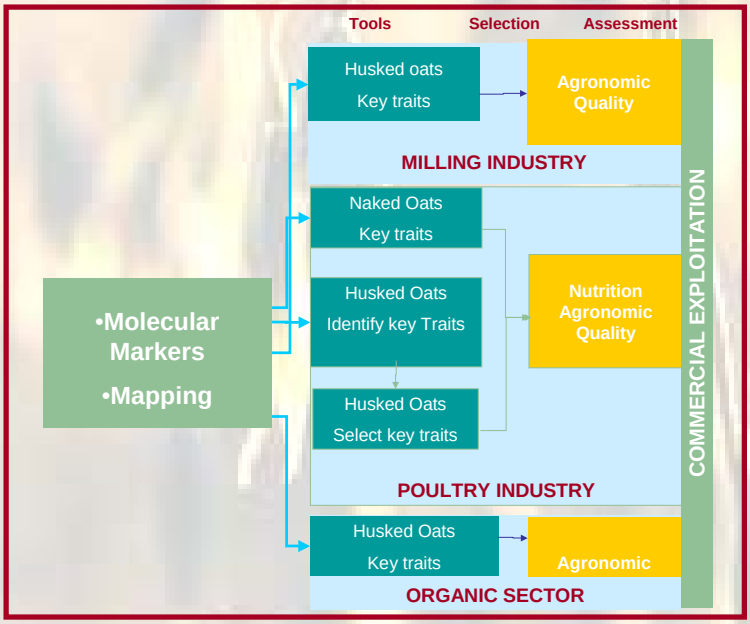
Project Aim: By combining molecular markers and conventional selection to incorporate important traits, together with selection under organic conditions, we can enhance the role of oats in organic agriculture. Oat improvement needs support from both industry and government to encourage wide-scale application. The main effort is on winter oats, but spring oats is also targeted, particularly for cultivation in less favoured areas of Britain, including Scotland, and for feeding livestock. Sustainable cropping, including organic, is designed to support bird and plant biodiversity.

Objective 1
Genetic Tools
Molecular Markers – Mapping - M.A.S

Objective 2
Incorporation of selected traits for use in the Milling Industry

Objective 3
Incorporation of selected traits for use in the poultry sector

Objective 4
Incorporation of selected traits for use in organic production



Selection of oats for organic systems should address:

•Low and variable fertility e.g. nitrogen

Oat varieties in organic systems should produce a stable and high yield under stress (nutrients, weeds, and other stress interactions) conditions, with similar fertility dynamics to those shown below.

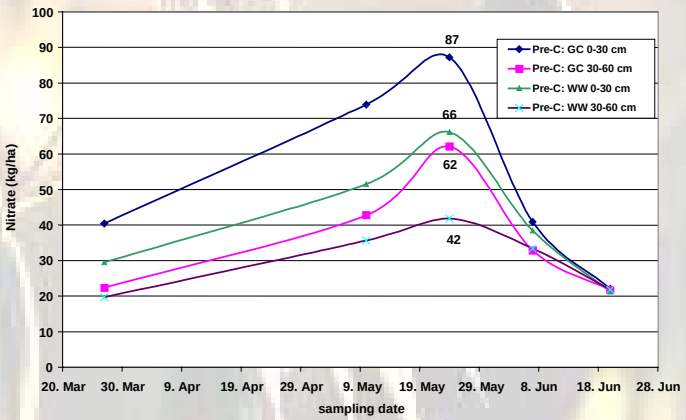
•Competitive ability and straw height

Tall plants are desirable as they provide large amounts of straw (beneficial for mixed farming) and are competitive against weeds (suitable for a break crop) .

•Combining ability with other species and varieties

Crop heterogeneity (oat mixtures or undersowing with clover) provides consistent yields, restricts diseases, provides complementation and compensation to respond to low and variable fertility, and provides consistent product quality.

Available nitrogen in organic rotations following grass clover (GC) or winter wheat (WW) at two depths (0-30 cm and 30-60 cm)



Expected Benefits:

- **the identification of new lodging, disease resistant, milling quality oats protecting and enhancing oats' image and markets.**
- **the entry of oats into least-cost formulated poultry diets resulting from the identification of molecular markers for added-value traits for sustainable production and premium livestock feed.**
- **a profitable and sustainable break crop meeting the needs of farmers, industry and society, in arable, mixed farming and organic systems.**
- **encouraging a major increase in the area of oats grown.**
- **the identification of oat varieties that meet the requirements of organic production.**
- **meeting the special needs of Scottish farmers and millers.**

The OatLink project is sponsored by Department of Food and Rural Affairs and the Scottish Executive Environment and Rural Affairs Department under the Sustainable arable LINK programme. Partners include IGER, Roslin Institute, SW Seed Ltd, Home-Grown Cereals Authority, the British Oat and Barley Millers Association, Bernard Matthews Foods Ltd, British United Turkeys Ltd, British Poultry Council, Oat Services, ADAS Consulting Ltd, GB Seeds Ltd, Elm Farm Research Centre and Svalof-Weibull AB.