

## Abstract

This project will develop and apply state-of-the-art genomic and metabolomic tools for oat genetic improvement. Its focus is on the understanding and manipulation of key traits that will enhance the value of oats in human health improvement, capitalise on the value of oats as a low input cereal, increase the environmental and economic sustainability of cereal based rotations, realise the potential of oats as a high value animal feed and develop new opportunities for using oats through advanced fractionation. Powerful enabling technologies for the identification of specific genes and markers will drive the development of breeder – friendly tools accelerating the production of improved oat varieties that will be marketed by industrial partners. A multi-disciplinary programme which combines modern phenotyping methodologies with the expertise of genomics researchers, oat breeders and end-users, will also address long term breeding goals by developing experimental populations which are polymorphic for agronomically important traits but more amenable to mapping and forward genetic approaches than conventional agronomic lines.