



“There is nothing like an Oat”

That’s not the title of a new version of the musical “South Pacific” but it could be the anthem of an ambitious new R&D project called “Quoats”. “Little disease, few weeds and impressive yields”, ORC crop researchers, Helen Pearce and Thomas Döring report on first year trials in pursuit of sustainable oat production.

It’s well known that oats are generally a good fit in organic rotations and the “Quoats” project – Harnessing new technologies for sustainable oat production and utilisation – aims to make them even better. This five year (2009 – 2014) research project, led by IBERS, Aberystwyth University, brings together a wide range of organisations in the supply chain, from breeders to end-users, to improve the quality and performance of oats.

As part of the project, ORC is carrying out field trials to assess the suitability of new oat lines for organic management systems, with particular emphasis on nutrient use efficiency. Eight varieties are being trialled at Wakelyns Agroforestry, Suffolk, including some naked oats, i.e. hull-less oats. These are particularly valuable for feed due to their high oil content and a beneficial amino acid profile. Similar trials are being run under non-organic management systems by ADAS in Nottinghamshire.

The trial is subject to two fertility treatments: untreated and treated with organic chicken manure pellets. The purpose of this added fertility is to investigate how efficient the new varieties are at taking up nutrients from the soil, but it will also help in testing lodging resistance; adding fertility tends to increase lodging, thus helping to distinguish between varieties with high resistance.

This year, the Wakelyns trial has looked good throughout the season, but suffered slightly from the drought, as evidenced by shorter straw than usual. There was very little disease or weed pressure, and yields were impressive. The highest yielding husked variety was Mascani at 9.7t/ha. Of the naked varieties,

a new line being bred by IBERS gave the highest yield at 6.2t/ha. Wet weather at harvest resulted in some varieties lodging, in particular Mascani. The oats will be analysed for their protein and oil content, as well as their physical quality, and the results from these analyses will be available soon.

The pivotal part of Quoats is a breeding programme. Using a combination of conventional phenotypic selection and modern molecular marker technology, the breeders at IBERS hope to develop varieties that maximise the value of oats as a nutritious cereal for humans and livestock. With human consumption in mind, the emphasis will be on improving the beta-glucan content, a compound that can help reduce cholesterol levels. Further work will be directed at physical grain quality, such as kernel content.

Improving the quality of oats as a livestock feed is also a goal. Initial results from in vitro studies suggest that oats might reduce methane emissions from the rumen and results are now being validated in vivo. One focus of the project is to determine the effect of different oat lines on methane emissions.

We already know that oats are an environmentally benign crop, requiring fewer inputs than other cereals such as wheat, and can produce a good crop even on soils of relatively low nitrogen status. Quoats will help to make oats an increasingly attractive part of organic rotations and conventional rotations, thereby making the environmental and health benefits of this crop more widely available.

The Quoats project is funded by AHDB and industry partners and is jointly sponsored by BBSRC, by Defra through the Sustainable Arable LINK Programme, by European Regional Development Funding through the Welsh Assembly Government’s Academic Expertise for Business (A4B) Programme and through the Scottish Government Contract Research fund. Refer to the project website www.quoats.org for further details.

Oat trials ready to harvest

