



INTRODUCTION

Recent inflation in feed and haulage costs has made cereal growing appear an appealing option on Welsh farms. However, neither the Welsh climate nor soils are as favourable for wheat growing as the major arable areas of eastern England and Scotland. Traditionally the most important cereals in Wales were barley and oats. Both these crops offer: lower input costs than wheat; better adaptation to poorer soils and the wet climate; high quality straw for feed and bedding; and increasing markets for grain for human consumption.

This factsheet provides an overview of the cereal crops that are, or could be, grown in Wales.

WHEAT

The majority (97%) of wheat grown in the UK is winter sown. Winter varieties can give very high yields (10t/ha +) when grown on fertile soils. However, they do require high levels of inputs: typically 200-250 kg N/ha; herbicide in autumn and spring; PGR (plant growth regulator); and three to four fungicide sprays.

Milling wheat (for bread) carries a premium over feed wheat, but yields of milling varieties are generally lower and the crop requires careful management to achieve milling specification.

World demand for wheat is strong and there is increasing interest in Wales from millers and bakers wanting to source locally grown wheat. Unfortunately, the wet Welsh climate favours fungal disease especially mildew and *Septoria tritici*.

Spring wheat is lower yielding and late to mature but can be a good option for whole-crop silage, especially if intercropped with legumes. Undersowing with grass (e.g. ryegrass) is also an option as the field can be used for autumn grazing after harvesting.

BARLEY

Barley is traditionally the most important cereal in Wales. Barley is more drought tolerant than wheat, so it is suited to lighter soils. It also tolerates salt and so can be grown in coastal fields affected by salt spray. Barley is less tolerant of acid soil and waterlogging, and if these conditions are likely then oats may be a better option.

Winter barley varieties are higher yielding but require more inputs than spring barley. For this reason spring barley often has a higher gross margin. Spring barley may also be managed under Tir Gofal.

Most barley is used for animal feed, but there is increasing demand for local malting barley from microbreweries.

Bangor University is researching the use of naked barley for bread making, breakfast cereals and other human food uses.



As with wheat, disease in a wet climate is a problem, especially *Rhynchosporium* (scald) and mildew. Straw strength is another important trait in exposed areas, both resistance to lodging (displacement of the lower stem and roots) and brackling (breaking of the upper stem).

OATS

Oats have been enjoying something of a revival recently. This is in part due to their beneficial health properties, high feed value and the availability of improved varieties produced by IBERS (formally IGER).

Naked oats have significantly higher protein and oil content than traditional oats. This means they have very high feed value for poultry and are a useful replacement for imported soya.

Food manufacturers are rapidly expanding their ranges of oat products from the traditional porridge and oatcakes to cereal bars, breads, breakfast cereals and even 'oat milk'.

Oats will tolerate wet, acid soils, but are less tolerant of drought. Poor straw strength has traditionally been the major problem of oats, but IBERS has made significant advances by developing dwarf varieties and so-called 'tall dwarf' varieties that are tall but have the very strong straw characteristics of the dwarfs. Mildew and crown rust are the most important diseases of oats.

RYE

Rye bread is not as popular in UK as the rest of Europe and hence the market for rye grain is limited. However demand is increasing and rye can be grown on poorer soils and with much lower input levels than wheat. Rye is very susceptible to the ergot fungus due to its open flowering habit. Ergot is extremely toxic to humans and livestock.

SPELT

Spelt is an ancient variety of winter wheat that is tolerant of poor soils and cold winters. Yields are lower than wheat and the straw is tall and weak. Maturity is later than common wheat. The grain must be de-hulled before use but demand is increasing from bakers who appreciate spelt's flavour. Spelt is usually grown on contract.

For information on varieties of wheat, barley and oats see the HGCA Recommended List, available at www.hgca.com

LESS COMMON CEREALS

A range of less common cereals are also grown, mainly as novelty crops. These include emmer and einkorn wheats, black barley (a type of naked barley) and bere (an ancient barley, once widely grown in the north of the UK). Triticale (a hybrid between wheat and rye) is grown for animal feed, and is particularly useful because of its relatively high levels of the amino acid lysine.