

INTRODUCTION

Many farmers in Wales are interested in diversifying into the production of alternative crops. Several companies offer contracts to grow alternative crops like Crambe, Camelina, hemp and flax. However the restricted range of standard pesticides available for use on some of these crops can cause problems with managing pests.

➤ Flax and linseed

In general the numbers of crop protection products available for use on novel crops is determined by their relationship to more widely grown crops. For example, flax is genetically very similar to linseed, and together they provide a sufficiently large market to justify some agrochemical investment. As a result, 20 compounds have full approval for use in pest management in flax crops. Experience at the University of Wales Bangor suggests that flax and linseed can both be grown with little risk of losses.



Fig 1: Flax

➤ Hemp

Similarly it is possible to grow hemp for fibre, as a wide range of products used on oilseed rape is available to the hemp grower. Experience in trials at Bangor suggests that insect and fungal attacks can be controlled at early growth stages. However, when grown as a fibre crop, hemp can sometimes reach 3m high meaning it outgrows the capacity of all but the largest spray equipment by the end of the season.



Fig 2: Hemp flower bud

➤ Camelina

Fewer products are available for minority crops like Gold of Pleasure (*Camelina sativa*) which is an oilseed crop. There are no full approvals available for herbicides to use with this crop, and as a result weed control can be a problem. Luckily, very few insect pests are known for Camelina, and the species is generally resistant to fungal pathogens, with the exception of downy mildew which can be problem when Camelina is grown at a large scale.



Fig 3: Camelina

Indeed, one of the advantages of growing minority crops in Wales is that there are very few reservoirs of pests and diseases in the Welsh countryside, so crops can often escape major infestations.

In the absence of standard pesticides growers may take advantage of the various natural and cultural methods used by organic growers to help manage pests. For example one of CALU's projects looked at whether sowing and ploughing in Caliente mustards as part of a potato rotation could help reduce wireworm. The idea behind the use of Caliente mustards is that as they break down in the soil they release gases which either deter or kill wireworms and other soil pests. There are many other idea around which can offer benefits if managed correctly.

Further details on the legal and regulatory aspects of pesticide related issues are available from the Pesticides Safety Directorate (PSD) in York (<http://www.pesticides.gov.uk/>). Further information on CALU's projects is available at www.calu.bangor.ac.uk.