

CROPS FOR THE FUTURE...

Our future cropping systems will face multiple challenges:

- extreme weather events, such as the drought and heat of 2022
- shifts in weeds, pests and diseases, and a reduced reliance on protective chemistry
- increased market volatility, such as that resulting from the conflict in Ukraine
- reduced levels of artificial fertiliser, in order to meet 'Net Zero' ambitions
- more sustainable land management to protect the environment and enhance biodiversity.

Existing underutilised crops, and those which are common overseas but relatively new to the UK, could all contribute to the more resilient farming systems that we will need for the future. As part of a Defra-funded review NIAB has shortlisted several key crops of interest in the UK (Figure 1).

Figure 1. Underutilised crops of interest in the UK

Cereals and grains	Buckwheat, Durum, Grain maize, Quinoa, Rye, Triticale
Oilseed and seeds	Ahiflower®, Hemp, Linseed, Sunflower
Grain legumes/pulses	Chickpea, Lentil, Lupins, Soya bean, Faba (field) bean, Yellow pea
Forage/forage legumes	Chicory, Festulolium, Lucerne, Red clover, Ribwort plantain, Sainfoin
Vegetable and tubers	Jerusalem artichoke, Kale, Radish, Snap/snow pea, Squash, Swiss chard
Fruits nuts and vines	Apricot, Haskap, Hazelnut, Peach/Nectarine, Table grapes, Walnut

Figure 2. Buckwheat can be used as a gluten-free alternative to wheat and other cereals. The crop encourages pollinators and is excellent at unlocking soil phosphate for subsequent crops

These diverse combinable crops can be grown with reduced inputs, and offer greater climate resilience than our current wheat, barley and oilseed rape crops. For example, animal feed could use maize, rye, and triticale, plus faba bean and domestic soya instead of wheat, barley and imported soya. Domestic durum, sunflower and grain legume production could significantly reduce our reliance on imports.

This will require investment and hard work: breeding better varieties, understanding how to grow them, and buy-in from the upstream processing, manufacturing and retail sectors

Figure 3. Chickpeas, high in fibre and protein, are widely used in Mediterranean and Indian cuisines. Chickpeas performed well in NIAB nurseries in 2022



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