

EXPLORING THE POTENTIAL FOR DOMESTIC CHICKPEA PRODUCTION

Chickpea can deliver high levels of protein, fibre and minerals, and with up to 60,000 tonnes imported annually, should find a ready domestic market. As a nitrogen-fixing legume, it also has the potential to reduce fertiliser use across the rotation. However, no chickpea varieties have been bred for UK conditions, and we know little about how to get the most out of the few overseas varieties which are available.

Cicero is a two-year Defra-funded feasibility study led by NIAB (agronomy, genetics, breeding) with supply chain partners Premium Crops (seed supply, agronomy, end-user markets), Place UK (grower and processor) and Viridian Seeds (genomics and biotechnology). Starting in April 2023, the project has three broad aims:

1. To identify which existing varieties are best suited to UK conditions
2. To understand how to grow these varieties more reliably and profitably
3. To begin breeding work targeting improved UK adaptation.

Already, in our first year we have:

- Established basic agronomy principles around pre-emergence herbicides, sowing date, sowing rate and fertiliser inputs
- Made crosses between different parents to kickstart breeding populations
- Tested material for cold tolerance
- Screened a diverse chickpea collection in the field to identify promising adaptation traits to cross into current elites
- Begun a new population to capture novel induced genetic variants
- Assembled draft genome sequences for several lines and initiated the development of a rapid screen for novel variants at genes controlling key adaptation traits.



Population development in the glasshouse



Extent of variation across nursery plots



Assessing different herbicide treatments



Extensive root nodules observed on farm

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