

Innovation Crops

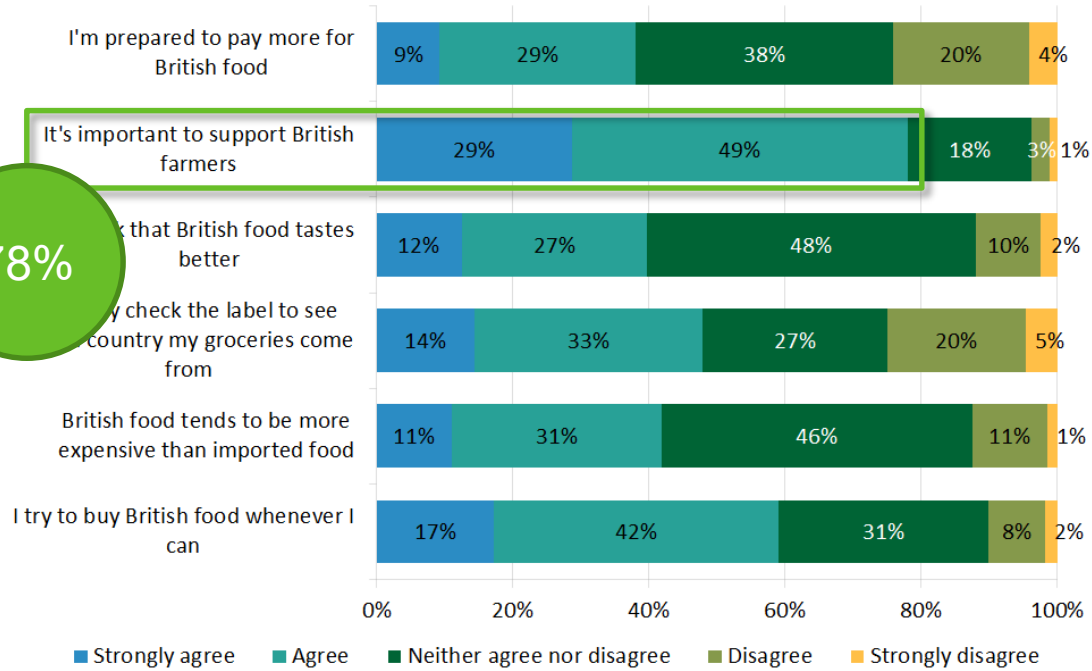
Opportunities 2021 & beyond

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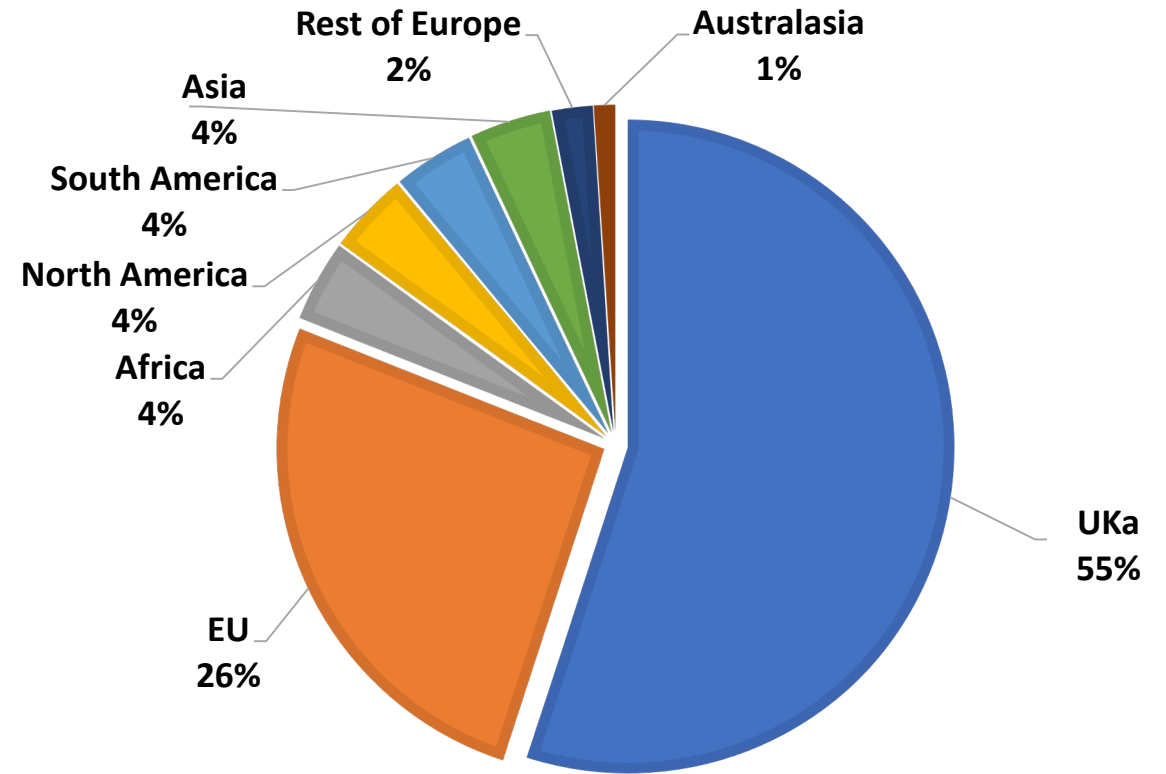
AgriiTM



UK Food Purchases



Attitudes to British Food purchases in the UK (2018)



UK food sourcing (2019)

What could this mean for UK agriculture?

- + Purchasing fluctuations on beef (-6%), lamb (-28%), pork (-7%), poultry (+12%), vegetables (+3%) & fruit (+1%) between 2015 & 2018-9
- + 20% reduction in meat consumption in 2019 vs 2018
 - 64% health benefits
- + >30% avoid either wheat, gluten, soy
 - Lifestyle choice not allergy
- + >33% 'free from' products are healthier than conventional products
- + Consumer thinking is altering towards considering more than fat and sugar
- + 14% currently consider themselves to be 'flexitarian'
- + Meat substitutes grew by 451% between 2013-2017 in EU
- + UK plant-based market est worth £443m in 2018



Naked oats

- + Naturally thresh free from the husk (groat)
- + High in protein and oils
- + High digestible energy
- + Good levels of β -glucan
- + Sold into 8 sectors
 - Largest quantities into animal feed
- + Food chain opportunities



Naked oats

- + **Exclusive Agrii varieties** with Agrii R&D support
 - Both winter and spring varieties on contract
 - Contracts available in England and Wales
- + **100% buyback on production of area** – therefore not defaultable
 - Buyers call within the agreed movement window with premiums over AHDB feed wheat
 - Premiums offered between £30 to £45 per tonne
- + **Key Benefits**
 - Winter types provide crop security in light of potential spring drought
 - Spring types provide potential cultural control of weed burdens
 - Secure end-market

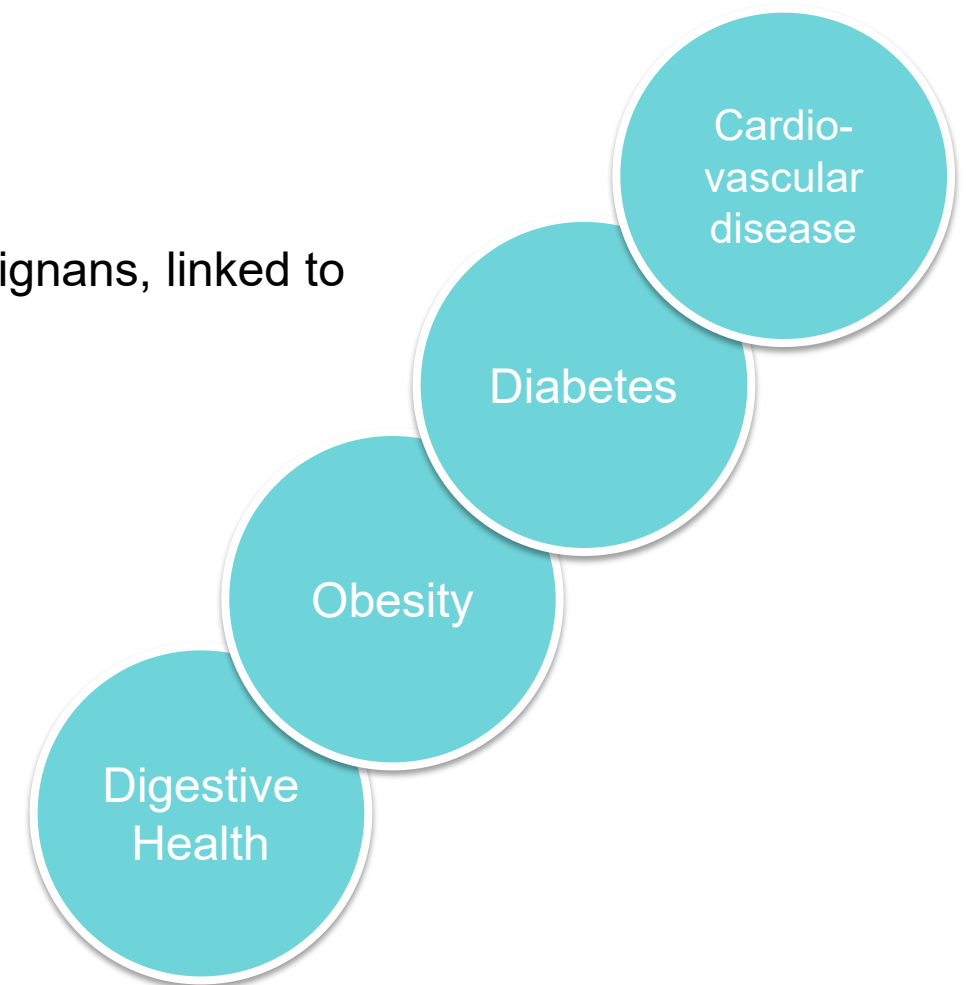


Food Barley

... but why barley?

- + High fibre, low fat
- + Lowers cholesterol, reducing risk of heart disease
- + Controls blood sugar levels, linked to type2 diabetes
- + Provides antioxidants, contain phytonutrients such as lignans, linked to lowering cancer incidences
- + Good source of vitamins and minerals
 - Selenium and Magnesium in particular
- + Novel improved lines are now becoming available

Variety	Protein (%)	Dietary fibre (%)	β-glucan (%)
RGT Planet	11.2	17.1	3.57
FMB2	17.63	34.97	6.84



Food Barley

... not feed barley

- + Naked Barley – High Beta glucan, increased fibre levels
- + Naked Waxy – plus high levels Amylopectin
- + Naked Purple – plus good levels on anthocyanin
- + Suited to Breakfast cereals, Biscuits, food ingredients
- + Lower yield levels, values will allow for this



FB Opportunity for Harvest 2021

- + 6-row Spring Barley
 - short strawed with early maturity
- + Sown at conventional spring barley timings at around 425 to 450 seeds/m²
 - Seed rates to be advised
- + Disease control of both brown rust and mildew
- + Naked barley for use in food and health food market
 - **End-user commitment for tonnage**
- + Crop licence fee of £140/Ha plus VAT with a Crop production fee of £400/MT

Variety	Yield (T/Ha)	Price (£/T)	Output (£/Ha)	Variable Costs (£/Ha)	Projected GM (£/Ha)	Yield % of Planet
Naked Barley FBM2	3.0	400	1200	497	703	40
RGT Planet	7.5	137	1028	432	596	100
Propino	7.2	137	986	422	564	96

Chickpeas

Are they an option for the UK?



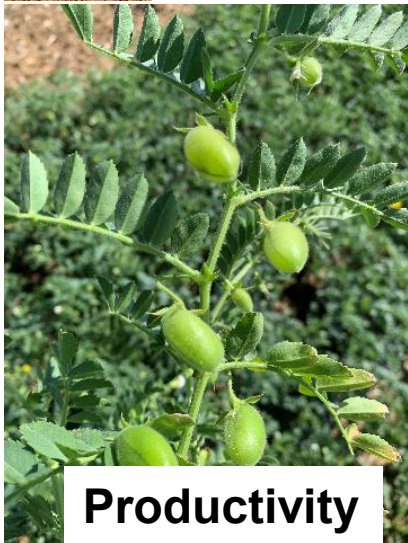
Benefits

- + Nitrogen fixing Legume crop
- + Soil improver – similar to peas
- + Use existing machinery
- + Short growing season
- + Market options
- + Demand for UK produce

Challenges

- + Chemistry
- + Optimum agronomy
- + Maturity
- + Harvestability

Agrii R&D work 2020



What could be next?



Haricot Beans



Purple Wheat



Lupins

Haricot beans

Benefits

- + UK provenance
- + Nitrogen fixing crop
- + Short cycle – early maturity
- + End-user demand
- + Good gross margin opportunity



Challenges

- + Land suitability
- + Chemistry
- + Optimum agronomy
- + Harvestability



Purple wheat



Lupins



Comparisons re maturity
Soya – Chickpea – Lupin 3rd Sept



Thank you



Any questions?

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