

Processed Legumes Research and Development Priorities 2017-2020 (for vining peas, picking peas, edible podded peas, broad beans and green beans)

Top Processed Legume priority issues (in consultation with the industry Legume Panel): Downy mildew, pre- and post-emergent herbicides, variety assessment, seed treatment, soil-borne diseases, pigeons, bean seed fly management

Key Objectives:

1. Ensuring adequate, sustainable crop protection for key pests, diseases and weeds
2. Delivering yield stability and continued quality
3. Developing recommendations for improved soil health
4. Developing crop nutrition solutions
5. Ensuring resource efficiency

Current research:

Target	Objective	Current work	Priority	Funded by:
Downy mildew	Peas: Improve control of primary and secondary disease; further varietal tolerance studies and screening for foliar fungicides required	<ul style="list-style-type: none"> • PGRO Foliar fungicides to control pea downy mildew • PGRO seed treatments to control pea downy mildew • FV 436: Pea downy mildew diversity in the UK 	HIGH	PGRO PGRO PGRO/ AHDB-Horticulture
Weed control	Peas: Pre- and post-emergence herbicides Green beans: Pre- and post-emergence herbicides	<ul style="list-style-type: none"> • PGRO varietal reaction to herbicides • Efficacy of active substances 	HIGH	PGRO PGRO
Soil-borne diseases	Peas: Diagnosis of soil-borne pathogens; development of management practices to reduce impact of soil-borne diseases; screening of active substances for disease	<ul style="list-style-type: none"> • PGRO/ Nottingham University PhD – Investigating the relationship between <i>Aphanomyces euteiches</i> and yield decline in peas • PGRO – Development of diagnostic techniques for <i>Fusarium solani</i>, <i>Fusarium oxysporum</i>, <i>A.</i> 	HIGH	PGRO/ Nottingham University PGRO

	suppression	<p><i>euteiches</i> and <i>Didymella pinodella</i></p> <ul style="list-style-type: none"> • PGRO/ Warwick University PhD – Understanding and mitigating against the causes of yield decline in pea 		BBSRC iCASE, PGRO
Bean seed fly /pea weevil/ thrips/ bruchid beetle	Peas and broad beans: To develop improved management strategies and help develop new active substances	<ul style="list-style-type: none"> • PGRO – Evaluation of products in collaboration with chemical companies • IUK 101910 Lure and kill technology to manage beetle pests of field beans and peas 	HIGH	PGRO/ Chemical manufacturers Innovate UK, BBSRC, PGRO and Industry partners
Aphids	Broad beans and peas: To develop improved management strategies and help develop new active substances	<ul style="list-style-type: none"> • PGRO – Evaluation of products in collaboration with chemical companies 	HIGH	PGRO/ Chemical manufacturers
Pigeons	Peas: To evaluate methods of pigeon control and their effectiveness	<ul style="list-style-type: none"> • FV 426a Brassicas, leafy salads, oilseed rape and legumes: Developing and evaluating management strategies to mitigate woodpigeon <i>Columba palumbus</i> damage to crops 	HIGH	AHDB-Horticulture
Stem and bulb nematode	Broad beans: Development of diagnostic techniques for identifying species; development of improved management systems	<ul style="list-style-type: none"> • PGRO – Evaluation of stem nematode viability in cattle manure when fed beans or bean straw • PGRO – development of molecular diagnostic technique for identification of species • PGRO/ Harper Adams University/ RAGT PhD – Management of <i>Ditylenchus</i> spp. in field beans (<i>Vicia faba</i> L) using biofumigant <i>Brassica</i> spp. and other allelopathic cover crops 	MED	PGRO PGRO PGRO/ Harper Adams/ RAGT
Soil health		<ul style="list-style-type: none"> • Green Pea Company – soil health project • CP 107c - Precision farming / intensification • CP 107d: Development of a Soil Management Information System 	HIGH	EIP-Agri (Rural Payments Agency), Green Pea Company, Birds Eye, PGRO AHDB AHDB/ PGRO

Crop nutrition	Peas and broad beans: Developing improved management strategies for nutrition; screening new and existing products	<ul style="list-style-type: none"> PGRO – Use of rhizobial and mycorrhizal treatments to enhance performance and yield in <i>Vicia faba</i> PGRO – Evaluation of products in collaboration with fertiliser manufacturers AHDB fertiliser manual, MANNER-NPK and PLANET update http://www.ahdb.org.uk/projects/CropNutrition.aspx 	HIGH	PGRO, PlantWorks, James Hutton Institute, Limagrain UK Ltd., Legume Technology PGRO, fertiliser manufacturers AHDB and industry partners
Pea maturity		<ul style="list-style-type: none"> PGRO – Evaluation of method for calibrating tenderometer machines 	HIGH	PGRO
Vining Pea Varieties	Variety performance evaluation; disease resistance; optimum sowing times; sowing density; drought tolerance	<ul style="list-style-type: none"> PGRO – Evaluation of varieties for performance and disease tolerance FV 340 / FV 340b: continuing - Vining Peas: Variety evaluation trials 	HIGH	PGRO/ Seed companies AHDB-Horticulture
Insecticide resistance	Evaluation of insecticide resistance in key legume pests; alternative solutions	<ul style="list-style-type: none"> IUK 101910 Lure and kill technology to manage beetle pests of field beans and peas 	HIGH	Innovate UK, BBSRC, PGRO and Industry partners

Future research priorities:

Climate change impact on crop production (High priority)

Soil health (High priority)

Edible podded peas and beans: New active substances for pest, disease and weed control (High priority)

All legumes: Seed treatments for pests and diseases (High priority)

All legumes: Insecticide resistance (High priority)

Management of slugs and snails (Medium priority)

Contamination of produce (Medium priority)

Prediction of maturity in vining peas/ production continuity (Medium priority)

Mechanisation and precision technology (Medium priority)

Improving product quality/ nutritional value (Medium priority)

Minimising risks of diffuse pollution (Medium priority)

Communications and advisory service for Vegetable Legumes

Description	Funded by:
PGRO technical updates	PGRO
Website www.pgro.org	PGRO
PGRO Vegetable Magazine	PGRO
Pest and disease monitoring services (via website)	PGRO and other partners
Group visits and field visits	PGRO
Plant clinic	PGRO
Advisory service	PGRO
Trials open day	PGRO
Vining pea variety descriptive list	PGRO/ AHDB-Horticulture
AHDB-Horticulture Crop Walkers' Guide – pea and bean	AHDB-Horticulture

Other relevant services:

Pesticide consultations; applications for extensions of authorisation for minor use; contract trials; seed testing services.