

3D Farming - making biodiversity work for the farmer. (Increasing beneficial insect numbers and diversity in field margins for aphid control.) - LK0915

Sponsor: DEFRA

Partners: IACR Rothamsted; Game Conservancy Trust; IACR Long Ashton; CSL; SAC; HGCA; CWS; Dow Agrosciences; UAP; Unilever Research; Tesco; HDC; PGRO; Potato Processors Assoc

Total project cost: £1.1m

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Abstract

The main aim is to manage field margins in order to increase the abundance, diversity and impact of beneficial predatory and parasitic insects and spiders for aphid control in cereals and break crops, whilst simultaneously enhancing biodiversity on farmland. Existing margin management options, including options promoted in arable stewardship schemes for increasing biodiversity, will be evaluated for their influence on the predatory and parasitic fauna within fields. These margins will also be used to develop novel, inexpensive methods of manipulating parasitic wasps using aphid pheromones and aphid-feeding hoverflies using wild flowers as a means of controlling pest aphids in integrated farming systems, thereby optimising pesticide use and reducing input costs.

The effects of these margin management options and of in-crop husbandry practices on the distribution of pests and beneficial insects and spiders within the crop will be measured using new data analysis and mapping techniques, allowing better targeting of pesticide applications. The results of the research will be used to formulate advice which will help farmers to address the challenges that they are likely to face as a result of the proposed reductions in the CAP and continuing pressure to improve their environmental profile.