



Market opportunities of plant teams for farm businesses

ABSTRACT

Farmers face challenging and volatile markets with added uncertainties due to changes in support schemes in relation to CAP reform in Europe and the Agriculture Act 2020 in the UK, as well as facing an increasing frequency of extreme weather events relating to climate change. Diversification is crucial to weathering these storms, and **plant teams may be a viable option for farmers seeking new markets**. However, improved understanding of and better access to the necessary markets is key to increasing the adoption of the practice.

Below, we explore how plant teams have the potential to play a vital role in diversification via **agronomic opportunities** that can lead to increased production of **niche crops** and **home-grown proteins**. The development of **collective infrastructure and cooperatives** for separation, processing and sales is considered. When considering plant team use, it is important to also consider the **wider benefits** to the farm business in the form of reduced inputs, soil management, crop protection and increased abundance of beneficial insects.

LEAD AUTHOR

Emily Trivett

Linking Environment and Farming, UK

CONTRIBUTING AUTHORS

Alice Midmer

Linking Environment and Farming, UK

Lucy Bates

Linking Environment and Farming, UK

PEDO-CLIMATIC ZONE

All

CONTEXT

Plant teams offer many potential and realised benefits, but practitioners have concerns about **whether there is an established system** for production and processing, or a **market** for their mixed crop or resultant products to support their widespread use¹. Across Europe, there is an increasing demand for **niche crops** driven by consumer food trends, and there has been an increase in the **demand for healthy foods** including pulses². Furthermore, there are growing expectations of farmers to reduce agriculture's **environmental impact** and minimise chemical residues in crops as well as targets for increased self-sufficiency at different levels. Plant teams have the potential to address these areas but **identifying a market** for the final product(s) or offsetting any investment through increased or more **reliable yields**, and **quantification of other agronomic benefits**, is needed to facilitate their adoption.

SELLING PLANT TEAMS

Seed separation is closely linked to market access for intercrops as specific markets for mixed crops for human consumption do not exist. Market demands are for the seed/grains to be separated. However, initiatives were found in different countries whereby, for example, farmers are working together to invest in kit or innovate on-farm. It is also worth exploring **local and regional direct sale options**. For example, one farmer in the UK, who trialled plant teams as part of the DIVERSify project but was already innovating with them, had invested in building his own separator on farm as he was convinced of the agronomic benefits. The separator increased flexibility for market access. The farm now supplies lentils and linseed to a small but growing independent business, Hodmedod's, who work with farmers to source and produce a range of niche pulses and grains popularly grown in plant teams. They also provide support on separation and cleaning. Working with Hodmedod's has helped UK farmers **explore new markets** for British grains and pulses, as well as **meeting consumer demand** for new food fashions relating to healthy eating.



Fig. 1 Hodmedod's are a food processors and retailer specialising in British grains and pulses. Credit: hodmedods.co.uk

In the Marche region of Italy a cooperative of farmers found that intercropping led to reliable **on-farm production** of barley and peas that could meet **livestock feed** needs for cattle and poultry production. Barley is an essential cereal used for energy concentrate, whereas grain legumes such as faba bean and peas are important protein sources. Farmers reported that growing a mixed crop allowed for a good level of **self-sufficiency and economic sustainability** allowing them to manage feed costs.

This type of production also offers an opportunity for livestock farmers to reduce their dependency on imported proteins, such as soya beans.

WIDER BUSINESS BENEFITS

The wider agronomic benefits of plant teams including beneficial effects on crop health, increasing beneficial insect populations, and reducing the need for chemical fertiliser use (e.g., [DIVERSify Factsheet no. 2](#); [DIVERSify Factsheet no. 4](#)) should also be considered although it can be difficult to quantify these³.

Further research is required to understand how these benefits play out over time and space. However, intercropping can be considered as a strategy that aligns with a positive Integrated Pest Management (IPM) and Integrated Crop Management (ICM) approach. These approaches aim to reduce the build-up of harmful pests and diseases over time and space. Intercropping is also widely recognised as being a workable practice within organic farming systems.

Recognition of the benefits of plant team use at a systems level has market potential through **environmental assurance schemes**. For example, 'LEAF Marque' is a leading global assurance system recognising more sustainably farmed products including those which are grown in systems implementing IPM and ICM. Policy support could further incentivise such initiatives⁴.



Fig. 2 Farmers ran trials and demonstration events as part of the DIVERSify project which included sharing information on processing, markets and end-uses for plant teams products

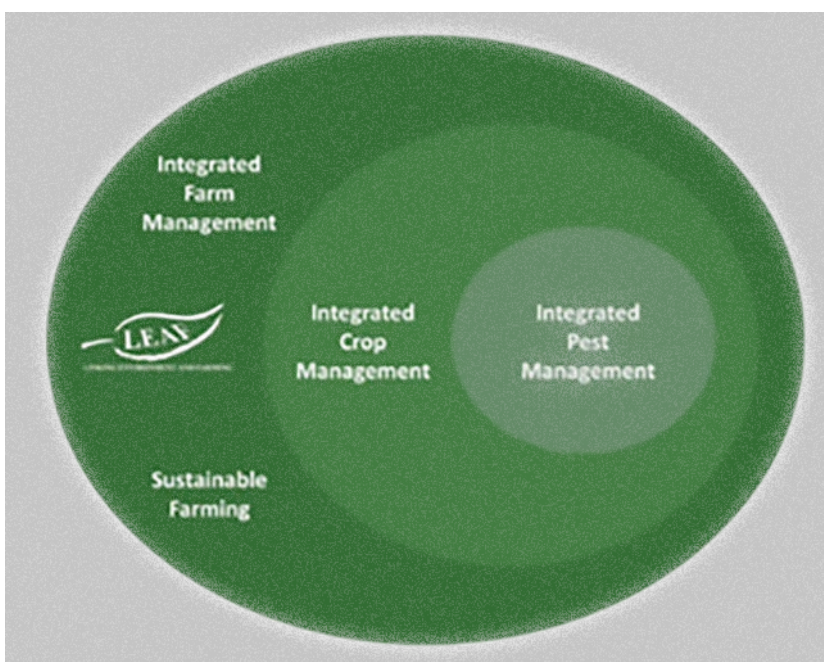


Fig. 3 Certification schemes, such as the LEAF marque or organic farming, can add-value to plant team products

CONCLUSION

Plant teams have the potential to improve business resilience through diverse new market opportunities. Whilst future policy and rural support options are uncertain, farmers who are more adept at adapting cropping systems are well placed to take opportunity of changing trends, such as the move towards healthy and sustainable food choices. Alongside building relationships with buyers, processors, and consumers; it is likely that assurance and certification schemes will grow and develop to reach customer demand for access to information on the sustainability of their buying options. Monitoring parameters such as input costs, soil health, weed and disease pressure and beneficial insect populations (see [DIVERSify Factsheet no. 9](#)) should inform ongoing management decisions and help to determine the overall business benefit of working with plant teams.

REFERENCES

1. Pearce B. et al. (2018) [D1.1 - Synthesis report on national stakeholder meetings](#). Developed by the EU-H2020 project DIVERSify
2. Hoek, A.C., Pearson, D., James, S.W., Lawrence, M.A. and Friel, S., 2017. Shrinking the food-print: A qualitative study into consumer perceptions, experiences and attitudes towards healthy and environmentally friendly food behaviours. doi.org/10.1016/j.appet.2016.09.030
3. Sears, R.R. et al. (2021). [D1.2 - Report on socio-economic factors affecting farmer adoption of plant teams](#). Developed by the EU-H2020 project DIVERSify
4. Mínguez, M.I. et al. (2021) [Deliverable 1.6 - Policy guide on plant teams for intercropping](#). Developed by the EU-H2020 project DIVERSify

FURTHER INFO

- > Watch [DiverIMPACTS Case Study 15: Hodmedod's \(UK\)](#) to find out more, or the [panel discussion of the Intercropping for Sustainability conference](#) which also explored business, markets and other opportunities that plant teams offer.
- > [‘Cultivating Knowledge’](#) - episode 3 of the DIVERSify web series Growing Beyond Monoculture, features some of the market innovations that farmers working with plant teams are already engaged in.
- > Read on to discover more about how machinery and precision agriculture technology can be applied to address some of the agronomic challenges of growing plant teams: [DIVERSify Factsheet no. 14](#)



The project has received funding from the European Union's Horizon 2020 research and innovation programme under agreement No. 727284.