Grower Summary

CP 131

Sources of Innovation in the Fresh Produce Industry

Annual *2015*

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Location of project:	Warwick Crop Centre, School of Life Sciences, University of Warwick
Industry Representative:	N/A
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Date project completed (or expected completion date):	April 2017

GROWER SUMMARY

Headline

This project aims to identify the sources of innovation in the fresh produce industry, determine what factors contribute to, or impede, successful innovation and how we might build further innovation capacity into horticulture in the UK.

Background

The UK fresh produce industry faces a number of challenges: exotic pests and diseases, input prices for oil, foreign competition, limitations in water abstraction, and restrictions on seasonal labour from overseas (National Horticultural Forum, 2011).

Innovation – the successful introduction of new growing methods, products or organisational forms – has been promoted to help meet these challenges. However, there are a range of barriers, both upstream and downstream, that slow or prevent new knowledge and innovations from making impact.

The aim of this project is to identify sources of innovation in the fresh produce industry – where it comes from, where it goes and how it is adapted – and the barriers that exist to its creation, spread and implementation.

By the completion of the project, we will have a better understanding of innovation in the fresh produce industry; it should be possible to provide recommendations on how to improve innovation capacity, and relevant knowledge generation and exchange. In turn, this could provide industry with more timely and relevant interventions and foster a more innovative sector.

Summary

Literature Review

In the first year of the project, a detailed review of available literature was conducted; due to the nature of the topic, this was a particularly large review that included fields such as: economics, innovation studies, agricultural systems analysis, business and communications. A literature review is an essential first step in determining what is already known about a given topic. While ‘innovation’ itself has been studied extensively, and although we see a lot of publications related to horticultural science, there are very few that combine the two subjects in an analytical manner. In fact, it is only the HDC’s own reports that discuss innovation in the

industry in such a way (such as *A New Vision for Horticulture R&D* (2011)), which is perhaps unsurprising.

In general, there has been a rejection of the view that innovation proceeds in a straightforward, controlled or even predictable way (Kline & Rosenberg, 2000; Leeuwis, 2004). This makes it difficult to study innovation in the UK fresh produce industry, but not impossible: there are examples of new ways of doing things that have had big impacts. The introduction of polytunnels in soft-fruit, for example, led to a doubling of output and value in UK strawberry production over a 20 year period (Calleja, Ilbery, & Mills, 2012; National Horticultural Forum, 2011). Direct-sales strategies, "veg-box schemes" (particularly for the organics market) and farm-shops have also revolutionised the way consumers interact with growers. It is important to capture what made these 'new ways of doing things' work, so case studies will play a major role in on-going research for this project.

An important theme of this project is to determine what barriers prevent innovation; unfortunately, there is very little published literature in this area with regards to horticulture. One approach would be to look to other industries, however, to see how they have approached the issue of barriers to innovation.

Biomedical Research

In the last few decades, there has been a concerted effort in the medical research industry to find, analyse and unblock so-called "blockages" in the medical research 'pipeline'. The medical research environment resembles the agricultural research environment: government departments and agencies who support research through grants and investment, research centres and universities, and private businesses such as pharmaceutical companies all play a role in the development of new drugs, interventions and equipment.

What researchers found was that there are barriers to innovation at all points along the research 'pipeline'. Applied science – those who take basic scientific principles and turn them into products – is generally underfunded, for instance. At the other end of the pipeline, doctors do not always have the time to learn about all the new research going on that might be relevant to them. Replace 'doctors' with 'farmers', and you'll notice that the same is true in agriculture.

A paper as part of this project was recently presented at the annual 'Innovation through Knowledge Transfer' conference at Staffordshire University, exploring more of these analogies.

Dutch Glasshouse Horticulture

There have been successes in horticulture elsewhere in the world. Dutch glasshouse horticulture has remained competitive despite stiff competition from growers in southern Europe operating in a low-tech manner but with cheaper labour and lower energy costs.

This was achieved through cooperation: growers invest in the generation, mutual exchange and application of new knowledge (Leeuwis, 2004, p. 10).

Interviews with industry experts are now being undertaken as part of this project to get better insight into perceptions of how we might improve our own innovative capacity in UK fresh produce.

Extension and Communication

The theory and practice of extension – the approach to getting agricultural research into practice at farm level – has changed over time. With the privatisation of ADAS, there are now a multitude of organisations offering agronomic advice (often with specific agendas).

The reasons for, and ways in which, agri-research is funded have changed (and some would argue not for the better). Industrial needs, some claim, are now seen as less important than other needs (environmental, for instance). While few question the importance of the wider environment to farming and society, the relevance of research to the farmer – especially its ability to give him or her an economic advantage – often determines its use. Making research more relevant for farmers and growers will therefore make the task of ensuring its use easier. Since relevance is a subjective concept, the interviews undertaken in this project will help explore what is seen as relevant for growers, as well as assessing how they communicate their needs.

Next steps

Moving forward into the second year of the project a series of interviews will be undertaken with those involved in the fresh produce industry at a number of levels: 1) research, 2) policy, 3) levy-body, 4) growers/farmers and 5) retail and 6) other appropriate individuals identified as belonging to the wider fresh produce industry. This will inform future research design, particularly with regards to a proposed survey of growers' needs and perceptions of innovation in winter 2015/16 and whether there is need for a social network analysis in future.

Other research is likely to include case studies of certain sectors in the industry; it would make sense to examine the use of polytunnels in strawberry production (given the impact this had on soft-fruit growing in the UK). The Potato Council also supports this project and a case study focussed on innovation in potato production – the specific topic to be determined through the

interviewing process – is also desirable. Recent knowledge exchange projects, such as the Soil Association's Field Labs, and knowledge transfer projects such as the VALERIE program (VALorising European Research for Innovation in agriculturE and forestry), which aims to put farmers in touch with the best possible formal research on a given farming-related issue (of which ADAS UK is a partner) (see http://cordis.europa.eu/project/rcn/111331_en.html) may also be topics for case studies.

Conclusions

Although in its early stages of primary-data collection, this project has laid the groundwork for future academic study of the fresh produce industry in the UK; a number of fields have direct bearing on innovation in UK horticulture, and other industries may also provide good models for further developing our innovative capacity. Likewise, the horticultural sectors of other countries may be used as examples to compare with our own.

Key references

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Financial Benefits

At this point, we cannot determine the financial benefit of a given method or policy recommendation: however, the value of improving the innovative capacity of UK Fresh Produce stands to be large.