Innovative Farmers - allelopathy and potato blight

Innovative Farmers is a not for profit network giving farmers research support and funding on their own terms. Through trialling, testing and hands-on research, we're helping farmers find lasting solutions to practical problems. Innovative Farmers is part of the Duchy Future Farming Programme, funded by the Prince of Wales's Charitable Foundation. The network is backed by a team from ORC, LEAF (Linking Environment and Farming), Innovation for Agriculture and the Soil Association, and supported by Waitrose. ***Phil Sumption*** *reports.*

Blight-resistant potatoes

An Innovative Farmers field lab tested heritage varieties of potato and found that all varieties, including newer breeds, performed well for yield and blight resistance. A taste test also found that all tasted good when cooked as chips and mash.

Ben Raskin, head of horticulture at the Soil Association, said: "Late blight is likely to challenge all potato growers as conventional chemistry becomes more restricted. There are some systems and management strategies that can help, for instance agroforestry planting can slow the spread of the disease across a field, and plant tonics and stimulants can help boost the crop's natural resistance. However these are limited and the reality is that most certified organic growers either top the crop (using a burner or a flail mower) when late blight arrives, or use copper to control its onset and spread.

"The most dangerous current strain of blight is the 13_A2 and traditionally resistant varieties such as Cara and Lady Balfour are now no longer able to withstand the disease. Breeding by the Sarvari trust and Agrico has helped increase the number of blight resistant varieties available but not all match the appearance and taste specifications favoured by the majority of the market."

The field lab involved a small number of growers across the UK (two growers in Gloucestershire and one in Scotland) as an introductory trial. The group tested the performance of up to 11 varieties of potato against blight, and then performed a taste test to help convince consumers and retailers that different varieties can also be good to eat.

Andy Dibben of Abbey Home Farm , who was involved in the field lab said; "I have been growing blight resistant varieties for a while now and have seen categorical evidence that blight resistance can be achieved through good plant breeding. Some of the Sarpo varieties have had astounding blight resistance but have lacked a little in taste; however each time I try a new variety the taste gets better.

"Achieving great taste alongside blight resistance appears to be the real challenge for potato breeders. Field labs are a great way for farmers to find well-trialled solutions to problems that affect their production, and crucially trials often involve testing techniques rather than products.

"Lots of research and development goes into new products as they can be sold for profit; less research seems to be done on using existing products and equipment in a different way as there is no commercial incentive and because it's harder to sell a new technique than a new product. Field labs are great way of ensuring this kind of research progresses."

Full results are available on the Innovative Farmers website and there are plans for further trials into taste and yield at Abbey Home Farm.

Grower field labs

The Organic Growers Alliance (OGA), alongside the Land Workers' Alliance (LWA) have been given special status to enable members to participate in particular field labs to be coordinated by ORC. The topics that have been identified are:

Allelopathy

Allelopathy refers to the production, by a plant, of chemicals (allelochemicals) which can influence the growth and development of another plant. This can be used for weed management through the inhibition of one plant (the weed or weeds) by another (usually the crop) through the production of allelochemicals. There are many crops that have been reported to show allelopathic properties, including wheat, barley, oats, rye, brassicas, red clover, vetch, yellow clover, trefoil, lucerne and buckwheat. It can be difficult to distinguish true allelopathic effects from the effects of suppression due to competition.There has been a lot of anecdotal evidence to show that using buckwheat in a rotation can work well against couch grass. Would you be interested in taking part in a field lab on this topic?

Using mesh covers for potato blight

Trials at the Biological Husbandry Unit in New Zealand using mesh covers to exclude Tomato Potato Psyllid (TPP) (*Bactericera cockerelli* had an unexpected side effect. There was a slight reduction in potato blight spores under mesh, and the actual occurrence of blight was slightly reduced in one trial. Could this be an option for UK growers and could it be economic? If you would be interested in trialling mesh covers in your potato crops and recording any differences in blight, this summer, do get in touch.

Soil amendments (GREATsoils)

We are working on an AHDB funded soil health project http://horticulture.ahdb.org.uk/great-soils and have a grower very interested in looking at comparing a range of soil amendments and their effect on soil health, for instance: woodchip, green waste compost, biochar, biostimulants. Ramial chips are woodchips made from trees and brush, from branches up to about 4 inches in diameter with or without leaves. They contain a high percentage of thin young bark, young wood, and sometimes leaves and are purported to have a positive effect on growth patterns and pathology of the crops.

Growers can either replicate some or all of the trials or just form part of the group that is interested in the results.

Contact Phil Sumption: phil.s@organicresearchcentre.com
www.innovativefarmers.org/