



With pink blushes on the skin, a higher dry matter and floury texture, Carolus makes a particularly good roast potato

# Organic potato production

The withdrawal of copper may be no bad thing, but producers need viable alternatives at their disposal for high blight years if they are to remain in business. **Tony Little** looks at the options

Until recently, organic producers in the UK have been able to use copper-based fungicides as a 'last resort'. However, the re-registration of Certis' product Cuprolyt for use on potatoes was declined because of insufficient/out-of-date data in the application. This means, to all intents and purposes, that there are currently no copper products registered for use on potatoes against blight.

From the perspective of the organic principles the withdrawal is perhaps no bad thing. While copper is an essential element for plant growth, there are long-standing concerns over the contribution copper fungicides make to an accumulation of copper in the soil and the associated impacts on soil organisms and the long-term fertility of the soil. In a system that promotes healthy soil above all else, the use of these products can seem inconsistent, something antagonists of organic farming never tire of pointing out.

**Resistant varieties**

Varietal resistance has always played a central role in the organic farmer's approach

to managing pests and diseases of crops, and none more so than in respect to late blight in potatoes. There are active breeding programmes for blight-resistant varieties in the UK and beyond. It has been the main focus of the Sarvari Research Trust's work since its establishment in 2001, with some spectacular results. They now have a suite of seven varieties (Sarlo Mira, Axona, Sarpo Una, Sarpo Shona, Blue Danube, Kifli and Sarpo Gwyn), which it multiplies and markets through the newly established company Sarpo Potatoes Ltd (SPL). In addition, Agrico UK, who own the 'Bioselect' brand, have four (Athlete, Alouette, Carolus and Twinner) and Greenvale another two (Sorrento, based on Axona, and Wizard). Collectively these companies offer a broad range of options in terms of foliar and tuber resistance, maturity, culinary uses and skin colours (see table).

While all these varieties are resistant to the main strains of blight found in the UK at the moment, pathogen-crop relationships are dynamic, and new resistance-busting races of blight can emerge at any time. In 2005, once such race, Blue 13, got a foothold

in the UK and has become increasingly dominant. It overcame varieties such as Lady Balfour, Valor, Remarka, Cara and Setanta, which is why these varieties no longer perform as well in areas where this particular strain is dominant. Searching for new sources of genetic resistance and developing new varieties are priorities in all breeding programmes. Sarpo, for example, has links with Bangor University, where they are using genetic markers to identify potential resistance genes, which are then bred into varieties using conventional techniques. Agrico UK use a similar approach through their breeding and research company 'Agrico Research BV' in Holland.

**Alternatives to copper**

At the same time, the search for biologically based alternatives to copper is gathering pace. One of the most promising and nearest the market is a fatty acid-based product being developed by Neudorf, currently working its way through the regulatory system. Saponins, found in a range of plants, including quinoa and ivy, have long been known to be effective against the blight

fungus. Labs from Britain to Bolivia are currently working on its formulation to improve its efficacy.

**Marketing**

With a broad range of resistant varieties already available, you could argue that the problem is as much about marketing as it is about technical issues. Clearly growers need to grow cultivars that their customers want, and without copper fungicides available, it will be more difficult to grow the more susceptible varieties, such as Pink Fir Apple. The Louis Bolk Institute in Holland has been supporting the introduction of new resistant varieties to the market. They found that retailers, especially those with a strong environmental focus, were open to including resistant varieties in their ranges as part of their commitment to supporting organic/sustainable production. The Institute helped to organise 'Potato Week' in the Netherlands, working initially with 'The Green Store' to launch five new blight-resistant varieties with taste tests and customer feedback sessions. The project was very successful and other retailers have now followed suit.

Leen Janmaat, the Senior Advisor at the

Louis Bolk Institute, believes that customers' loyalty to specific varieties is overstated. "Consumers often choose their potatoes based on the category to which they belong, such as waxy or floury. Packers are decisive in that respect. If a wholesaler chooses to fill the bags with Carolus potatoes consumers will accept them," he said. Albert Bartlett's promotion of Rooster is a good example of the power of promotion. Throw enough money at the advertising and suddenly a variety with red skin and cream-coloured flesh that nobody really wanted, suddenly becomes one of the most-grown in Ireland.

As the case studies (see panel) show, it is quite possible to market resistant varieties, but it requires a concerted effort from the whole supply chain. Given the urgency of the situation with respect to copper, now might be a good time to start! **OF**

**Tony Little** runs his own business, the Sustainable Farming Consultancy. He grows seed potatoes for Sarpo Potatoes Ltd (SPL) and is the Field Officer for 'Sustainable Potatoes Wales'.

## Clever marketing

**Neik's White, Meyer.** 'Bionica' has very high resistance to blight, but its white flesh is less popular in Holland. They presented the white flesh as a unique selling point and gave the potato a 'story' by renaming it 'Neik's White' after one of their growers. It's now selling in a number of stores.

**Carolus, Agrico UK.** This variety is making inroads into the UK organic market with promising results. In Sweden, Carolus has completely replaced the King Edward market as it tastes great with better yield and resistance to late blight

**Sarlo varieties, SPL.** At the consumer level, SPL has taken a ground-up approach by targeting those who grow their own. Feedback from these growers provides the raw material for an effective PR campaign. They work thorough various media channels, with social media proving highly effective. Processing, retail and wholesale markets are important, and resources are put into building relationships with them.

Characteristics of key disease-resistant varieties												
	Mira (Sarlo)	Shona (Sarlo)	Blue Danube (Sarlo)	Axona (Sarlo)	Una (Sarlo)	Kifli (Sarlo)	Carolus (Agrico)	Athlete (Agrico)	Alouette (Agrico)	Twiner (Agrico)	Sorrento (Greenvale)	Wizard (Greenvale)
Maturity	Maincrop	Early maincrop	Early maincrop	Maincrop	2 <sup>nd</sup> early	Early maincrop	Maincrop	Early/ 2 <sup>nd</sup> early	Early maincrop	2 <sup>nd</sup> early	Maincrop	Maincrop
Skin colour	Red	White	Blue	Red	Pink	White	Parti colour	Pale yellow	Red	Yellow	White/ pink eyes	White
Flesh colour	White	White	White	Cream	White	Cream	Yellow	Pale yellow	Yellow	Yellow	White/ cream	Cream
Late blight foliage	7	7	4	7	6	5	9	9	9	8	7	6
Late blight tuber	9	4	4	5	5	5	9	9	8	8.5	6	3
Blackleg	7	3	7	6	6	7	6	8			6	5
Common scab	4	5	3	4	5	4	4	4	5.5	5.5	6	7
Powdery scab	5	7	6	5	7	3	5	5	7		8	6
PCN Pallida	2	2	3	2	2	2	Susceptible	Susceptible	Susceptible	Susceptible	1	3
PCN Rost.	2	3	9	2	3	9	Susceptible	Resistant	Resistant	Resistant	1	7
Leaf roll virus	5	3	9	8	5	3					8	4
Virus Yo	9	7	8	8	8	7	8	6	8	7		3
Dry matter (%)	23	21	25	23	18	19	21	23	21	20		
Preparation /use	Mash, chip, bake, roast, crisp	Mash, chip, roast	Mash, chip, roast, crisp	Mash, chip, bake, roast, crisp	Boil, salad	Boil, salad	Roast, homemade chips, boil & mash	Salad, boil	Mash, boil	Bake, boil, mash	Bake	Bake