

# Blight resistant potatoes – Sárvári Research Trust Open Day – 14th August

The Sárvári Research Trust (SRT) is a not-for-profit company based near Bangor in North Wales. The aim of the trust, formed in 2002, is to study late blight and select new blight-resistant Sárpo breeding material, originating from Hungary, for commercial use in the UK. The first two varieties to be accepted onto the U.K. National List were Sárpo Mira and Axona. Four new varieties were awarded national listing status in June and were launched at this annual open day. These are particularly exciting due to good flavour, cooking quality and niche market opportunities. The day provided growers with the chance to see how the new varieties and other clones performed in yet another challenging blight year.

## Potatoes for the future

David Shaw, Director of Research at SRT, introduced the day by stressing the contribution that Sárpo potatoes can make to low-carbon farming in the UK. Not only are they highly resistant to new strains of late blight but also they are able to give high yields without chemical inputs. Growing Sárpos can lighten the carbon footprint of growing potatoes, through reduced use of sprays for blight and aphids. Deep roots confer drought resistance (Mira is being grown for this reason in North Africa), vigorous growth requires less weed control and their ability to grow in marginal conditions reduces nutrient requirements. Long dormancy also means that they can be stored in ambient conditions for longer without refrigeration.



David Shaw at the Sárpo trials on Anglesey

Dr Shaw likened the breeding of potatoes for blight resistance to an arms race. He said that the new aggressive Blue 13 strain of blight which they identified in 2005 was now the dominant strain in the UK. It has knocked out many varieties previously thought to be resistant. Lady Balfour, for example, is now “just about as susceptible as any other one.”

The SRT was involved in a project flippantly referred to as “the love-tunnel project”, funded by The Potato Council which asks ‘What happens when the blight fungus mates?’ There is concern that resistant oospores produced by

mating might be surviving in the soil over many years to infect new crops. A project ‘Keeping up with the evolving blight’ is a collaboration with Teagasc (The Irish agriculture and food development authority) and AFBI (Agri-Food and Biosciences Institute, Belfast). Work with Bangor University is in progress to develop plant extracts for organic blight control. SRT are also testing new tomato varieties for resistance to blight and the preliminary results are ‘very exciting’.

## The new Sárpo varieties

### Sárpo Una

This second early has good foliage-blight resistance for an early variety and excellent tuber blight resistance. Tubers are rose-pink with a good skin finish. Flesh is white in colour and low in dry matter making it useful for boiling, gratin and as a salad. If left to mature, it yields heavy crops of long-oval tubers, useful as early bakers. Trials have found good resistance to powdery scab, potato virus Yo, dry rot (*F. sulphureum*), black dot, silver scurf and skin spot.

### Sárpo Shona

Sárpo Shona is a blight resistant and virus Yo resistant, white-skinned variety with early-maincrop maturity. The short foliage is dense and weed-smothering. Tubers are short oval and can be prepared in most ways due to their medium dry matter content. Independent variety trials show tubers to have good resistance to black dot and black scurf. It is named after the wife of Adam Anderson (who first brought Sárpo potatoes to the UK).

### Kifli

Kifli is a long, white-skinned variety with outstanding flavour when prepared as a freshly harvested, loose-skinned potato. Plants show medium resistance to late-blight and high resistance to virus Yo. Kifli is best planted early as it is a slow starter. Maturity is early maincrop. The crop can be harvested gradually over a long period as larger, more mature tubers still have excellent flavour. Kifli has good resistance to splitting and bruising, to blackleg and to PCN Ro1.

### Blue Danube

Blue Danube is a plant with purple-black stems, shiny dark foliage and spectacular blue-skinned tubers of good shape and skin finish. It is an early maincrop with medium foliage-blight resistance and good tuber-blight resistance. It has good resistance to virus Yo and to leafroll virus, blackleg, dry rot (*F. coeruleum*) and PCN Ro1. Flesh is white and of medium dry matter content. Referred to last year as Adam Blue, it was named in a competition which was won by David Shaw’s daughter Annie (!).

## Selection and multiplication of Sárpo varieties

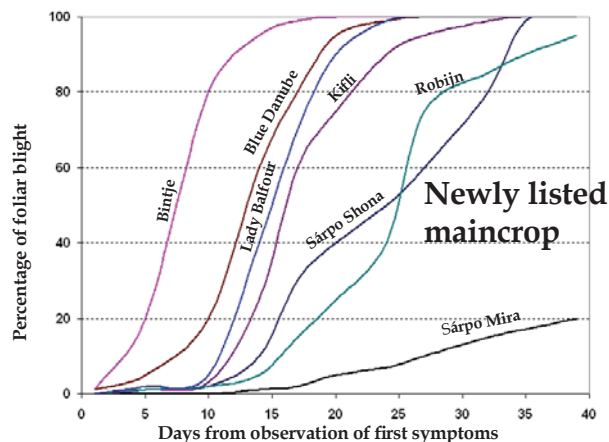
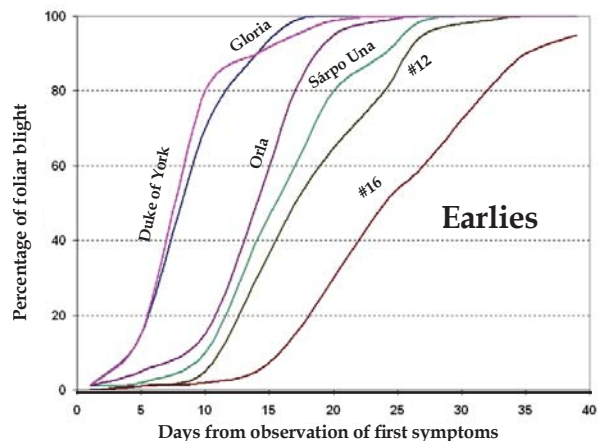
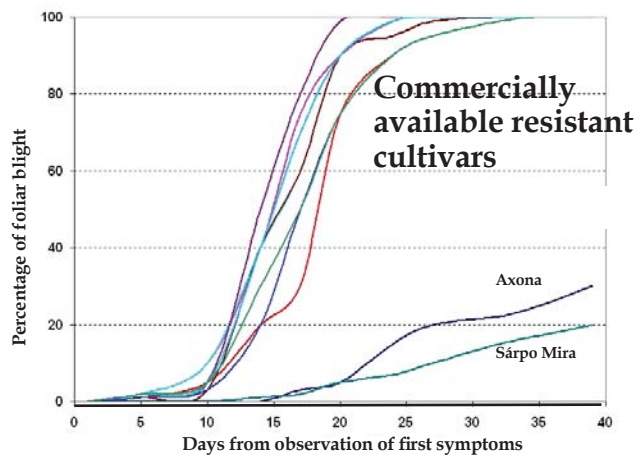
Simon White, the SRT Trials Manager, talked about trials and the process of selection and listing of new varieties. Selection is not just about blight resistance but yield, appearance and cooking characteristics are also important. The trials are conducted to EU standards on a conventional farm on Anglesey. The Blue 13 strain is introduced to the trial as soon as blight is detected on the farm. Early varieties are planted later than the maincrops so that they are maturing at the same time. Less than four weeks after inoculation all the non-Sárpo varieties approached 100% infection while most of the Sárpo varieties were still green and growing strongly. It was clear that Sárpo do get infected under the heavy blight pressure of the trial but the small amount of disease has little effect on yield.

Getting new varieties onto the National List is an expensive and time-consuming process with no guarantee of success. To be added to the list, a variety must be distinct, sufficiently uniform and stable (DUS) and have satisfactory value for cultivation and use (VCU). The four varieties submitted had to undergo 2 years of testing at SASA (Science and Advice for Scottish Agriculture) and NIAB to satisfy these criteria. Now that they have been accepted there is a need to multiply them up rapidly to ensure sufficient quantities are available to meet demand. Low aphid numbers and few ware crops in the vicinity are a requirement for successful seed growing. Scotland is suitable but so also is Wales, especially as the varieties are naturally very virus resistant, so can be grown at lower altitudes. SRT have a project funded by the Welsh Assembly Government to encourage Welsh farmers to diversify by growing Sárpo seed potatoes. Full training and agronomy advice is provided and there is a guaranteed market. This year about 10ha of seed potatoes are being grown and all Defra field inspections have been passed. Five potential new growers have been identified and more growers are required for the coming years. The requirements are that the land must be tested and shown to be free of PCN, have had no potato crops for at least five years and that no other potato crops should be grown within 50m of the seed crop.

There is one more Sárpo variety that is going through the listing process at present. The trial included other promising seedlings with early or early maincrop maturities. We were shown some quite beautiful and uniform whites that appeared to be yielding well. There is a continual need to bring in new varieties to trial from Hungary as there is no guarantee that the present Sárpo's resistance will continue for ever. Simon said "at present there is nothing from any other breeding programme that is resisting Blue 13 like the Sárpos."

## Growing Sárpos

Speciality potato seed supplier Alan Romans gave his experiences of growing Sárpo potatoes. Alan has been involved in the Sárpo story from the beginning and was able to persuade seedsmen Thompson & Morgan that these potatoes were incredibly important. They have taken them on and continue to promote



them very successfully to the amateur market. He does not believe that Sárpo potatoes have been treated with due respect and the vertical integration of the potato industry has meant that it has been more difficult to breakthrough into the commercial market. He feels there has been a lack of understanding of how to grow them properly as many growers cut off the foliage as soon as they see the lower leaves yellowing and developing black spots as nutrients are recycled within the plant. Alan said that Sárpo Mira is an indeterminate variety that will keep growing until it is killed by frost, with a steady increase in size and in dry matter. However tubers are better harvested before they get too large. He recommends gardeners harvest one plant every few weeks to find out when to cut off the foliage. Then harvest should be delayed for three weeks to allow skins to thicken and blight spores to die.

*Phil Sumption*

More info on SRT website [www.sarvari-trust.org](http://www.sarvari-trust.org)