Organic Producers' Conference

Growing potatoes sustainably in a wet climate: how suitable are Sárpo varieties?

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SARVARI RESEARCH TRUST

PRIFYSGOL BANGOR UNIVERSITY 1884

calu

Cronfa Amaethyddol Ewrop ar gyfer Datblygu Gwledig: Ewrop yn Buddsoddi mewn Ardaloedd Gwledig
The European Agricultural Fund for Rural Development: Europe Investing in Rural Areas

Llywodraeth Cynulliad Cymru
Welsh Assembly Government

Sárvári Research Trust

A not-for-profit company registered in UK in 2002

Aim: to study late blight and select new Sárpo breeding material for low input and organic growing

6 million tonnes of potato are grown in UK

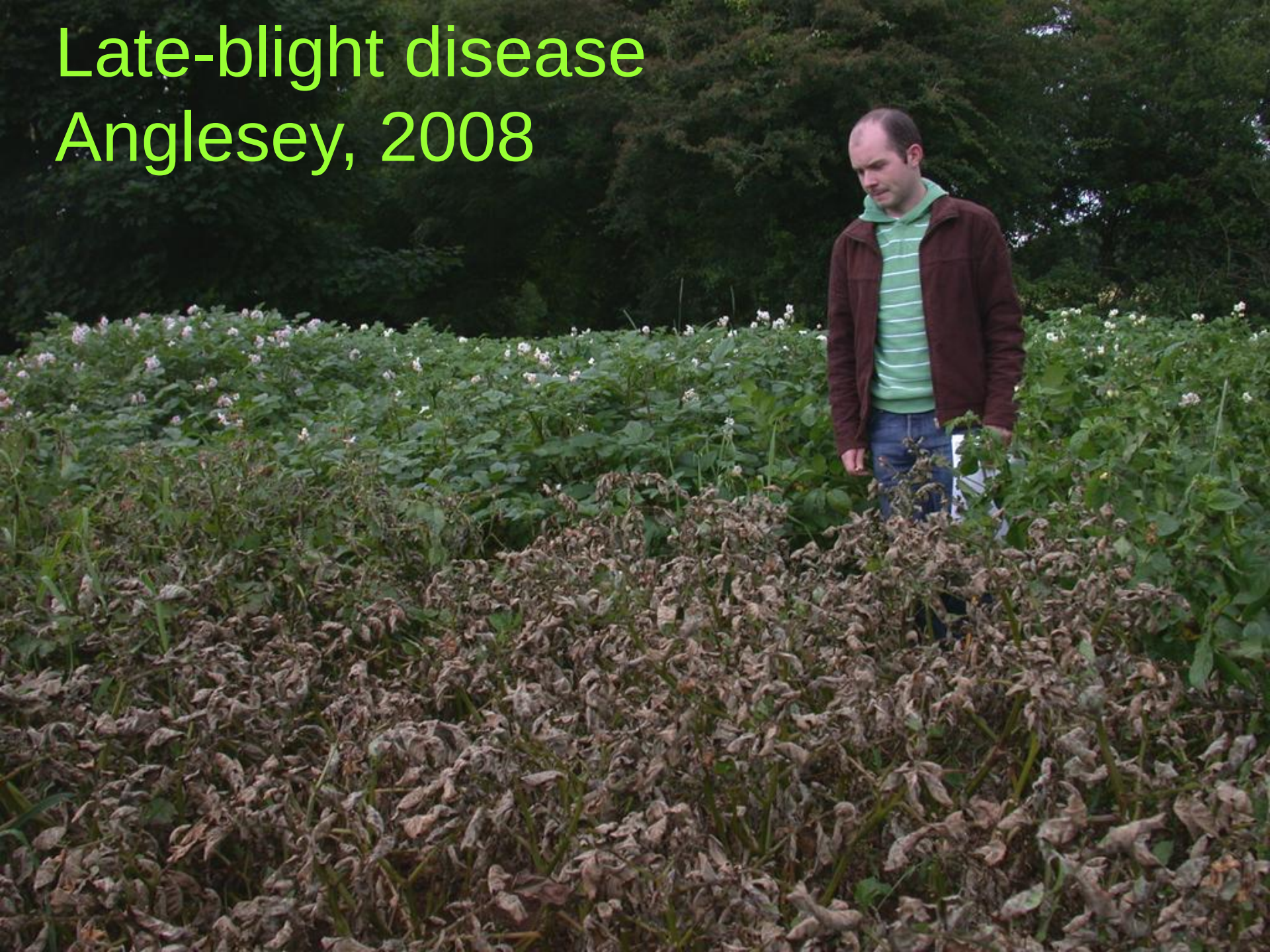
Massive inputs:
not sustainable

Modern potato cultivars are chemical junkies selected to look good on the supermarket shelf. Greenhouse Gas emissions for these, grown conventionally were estimated by.Jon Hillier
U. Aberdeen

The large inputs include, all cultivation, seed treatment, fertilizer application, planting, spraying for weeds pests and diseases, irrigation, haulm destruction and harvesting. Added to these is the embedded carbon in manufacture of chemicals and N2O emission

The perfect potato

- Resistant to all pests, pathogens and rough treatment
- Smothers weeds
- Medium foliage maturity
- Frost and drought resistant
- Always gives a high yield of uniform, smooth tubers
- Good taste when boiled, chipped, gratin, salad, crisps


Late-blight disease
Anglesey, 2008

Foliage Blight

Phytophthora infestans
caused Irish potato famine

Tuber blight

Fungicidal control of late blight in crops of susceptible varieties

Conventional growers use up to 20 sprays which do not cost much

Copper is not an acceptable organic fungicide

Acceptable organic fungicides are not yet available

Use resistance to control late blight - with caution

Some resistance may fail

The Arms Race

New strains can defeat resistance genes

Use resistance to control late blight - but with caution

Some resistance may fail

The Arms Race

New strain can defeat some resistance genes

Strain Blue 13

Larger lesions, form spores faster

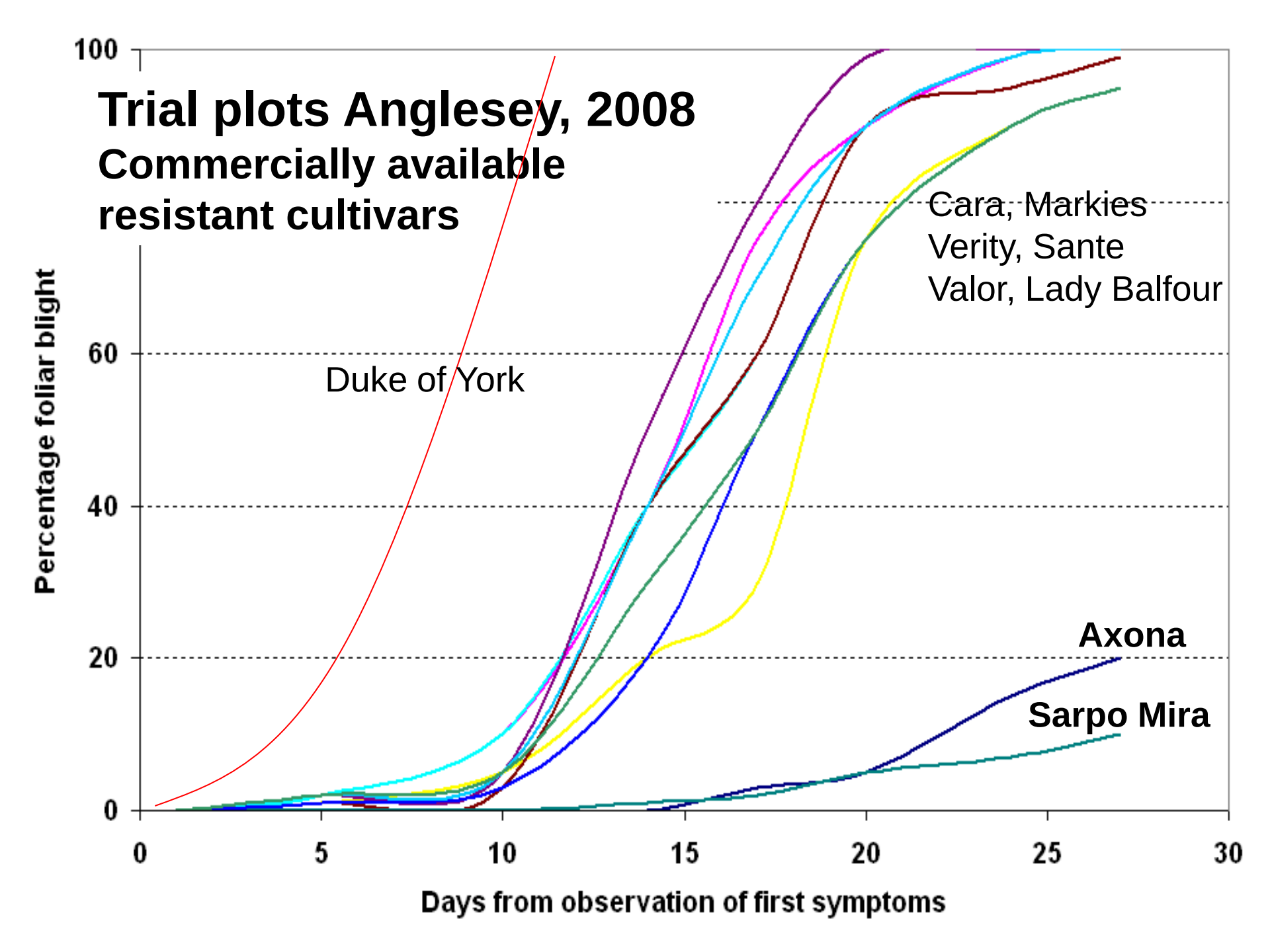
Many varieties no longer useful

Published scores (1-10) for resistance are out-of-date

Next slides comparing 2 cvs show how wrong they are


Axona – 6
Sante – 7


Sarpo Mira - 9
Verity – 8


Trial plots Anglesey, 2008
Commercially available resistant cultivars
Cara, Markies
Verity, Sante
Valor, Lady Balfour
Duke of York
Axona
Sarpo Mira
Percentage foliar blight
100
60
40
20
0
0
5
10
15
20
25
30
Days from observation of first symptoms

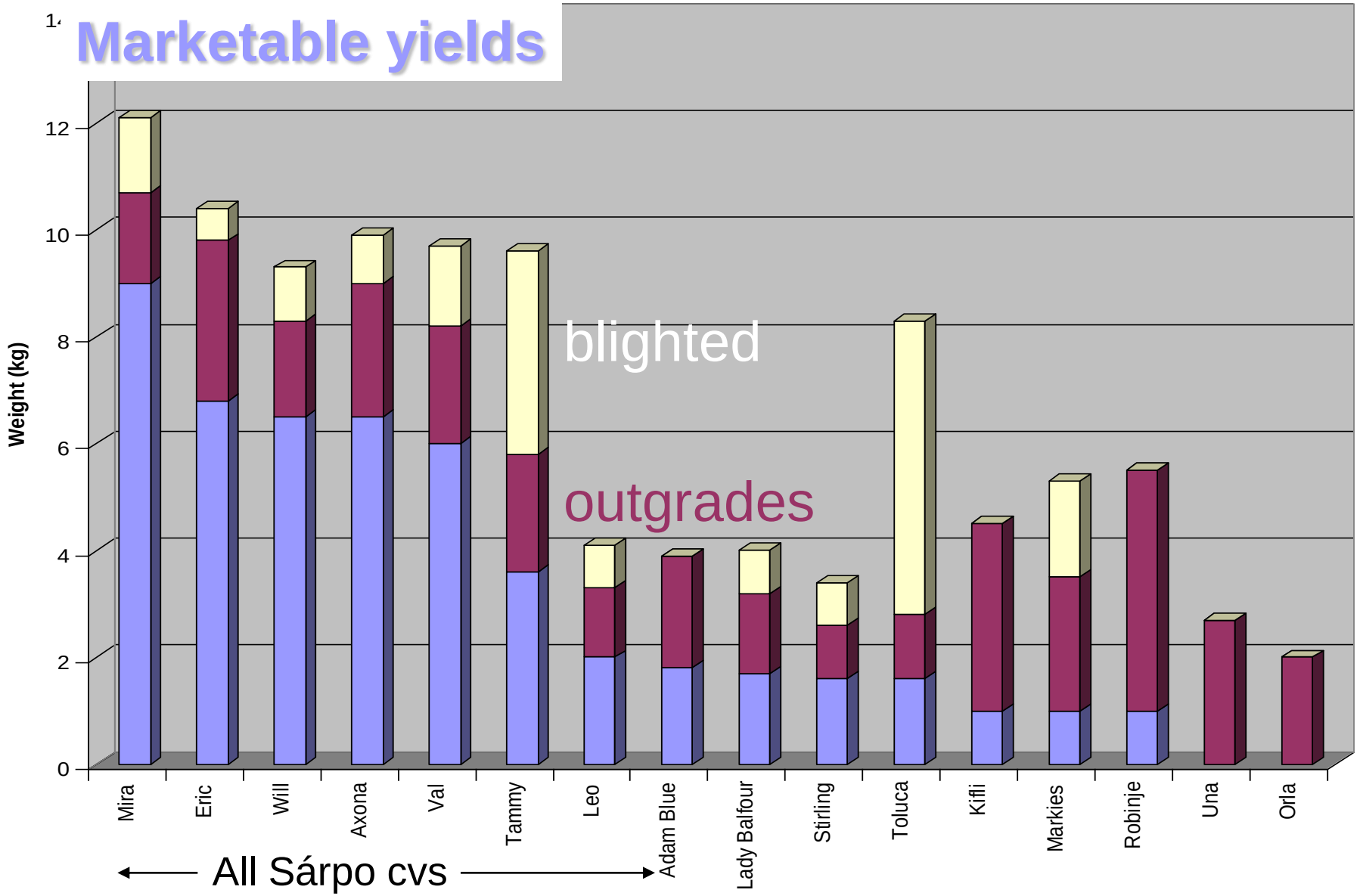
Resistance genes express in foliage - and sometimes in tuber

Foliage	R	R	S	S
Tuber	R	S	S	R

-and sometimes only in tuber

Beware of varieties with resistant foliage and susceptible tubers

Tuber Blight: Strain Blue 13



A blight resistant potato has to have:

- High yield
- Uniform size, shape, shallow eyes
- Early maincrop maturity (or earlier)
- Good taste and texture
- Reasonable resistance to many other diseases, especially viral diseases
- Other desirable traits are PCN resistance, weed smothering foliage, drought tolerance

INTERNATIONAL POTATO COMPANY

AXONA

Breeder	Sarpo Kft
Parentage	76 PO 12 14 268 x D187
Maturity	Late Maincrop
Skin Colour	Red
Market	General Purpose
Field Characteristics	
Yield	High
Tuber Shape	Oval-long
Tuber number	Moderate
Flesh colour	Cream
Eye depth	Medium
Disease Resistance	
Gangrene	4
Foliage Blight	7
Tuber blight	5
Common Scab	4
Powdery Scab	5
Blackleg	6
Leafroll Virus	8
Virus Y	8

Bred by the Hungarian Sarvari family and part of the well known Sarpo line of extremely blight resistant potatoes.

This variety offers a very high blight resistance and virus resistance. It has very dense weed-smothering foliage and performs well under less than optimal growing conditions.

International Potato Company Ltd.
Pentlandfield,
Roslin,
Midlothian EH25 9RE
Phone: 0131 448 0222 / 01307 840396
Fax: 0131 448 0333 / 01307 840404
Email: Wedderspoon@sol.co.uk

INTERNATIONAL POTATO COMPANY LTD.

Sàrpo Mira

Breeder	Sarpo Kft
Parentage	76 PO 12 14 268 x D187
Maturity	Late Maincrop
Skin Colour	Red
Market	General Purpose
Field Characteristics	
Yield	High
Tuber Shape	Oval-long
Tuber number	Moderate
Flesh colour	White
Eye depth	Medium
Disease Resistance	
Gangrene	4
Foliage Blight	9
Tuber blight	9
Common Scab	4
Powdery Scab	5
Blackleg	7
Leafroll Virus	5
Virus Y	9

Bred by the Hungarian Sarvari family and part of the well known Sàrpo line of extremely blight resistant potatoes.

This variety offers a very high blight resistance and some virus resistance. It has very dense weed-smothering foliage and performs well under less than optimal growing conditions.

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Nationally Listed 2009

Sárpo Una

- Pink skinned first/second early. Can also be left to mature for summer bakers
- Good blight resistance for an early variety
- High yield & tuber number
- Good skin finish
- Resistant to powdery scab, dry rot and black scurf

Nationally Listed 2009

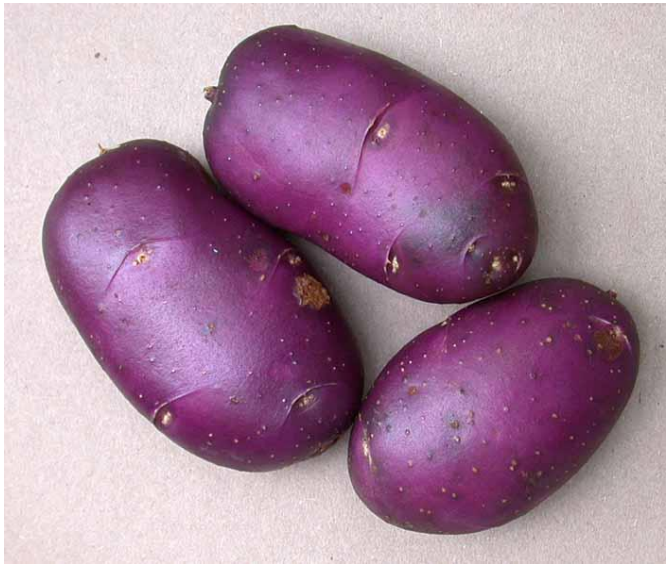
Sárpo Shona

- General purpose early maincrop
- Good foliar and tuber blight resistance
- Compact growth habit
- Good skin finish
- Medium dry matter
- Resistant to powdery scab, black dot and black scurf

Nationally Listed 2009

Blue Danube

- General purpose/niche market early maincrop
- High yielding with high tuber number
- Good tuber blight resistance
- Good shape and skin finish
- High dry matter
- Resistant to PCN Ro1, Blackleg and Black scurf



Nationally Listed 2009

Kifli

- Early maincrop salad/punnet variety
- Good foliar and tuber blight resistance
- Superb ‘new potato’ flavour
- Good skin finish
- Medium dry matter
- Resistant to PCN Ro1, Blackleg and virus Yo

Growing Sárpo varieties is sustainable

Sárpos are high yielding and save on:

Blight sprays
Aphid sprays (not needed for virus control**)**
Weed control (foliage is weed smothering)
Nutrient demand (plants are deep-rooting)
Irrigation (some cvs are drought resistant)
Cold Storage

Greenhouse Gas emissions
Preliminary estimates, Jon Hillier, U. Aberdeen

Footprint of a Sárpo cv is 61% of the footprint of a conventional variety

This does not include the savings when storing long-dormancy Sarpos in uncooled store into Spring

Organic, certified seed of
Sárpo Mira, Axona and Blue Danube
is available but in short supply

Certified Sárpo seed is now being
grown in North Wales (Conwy Estuary)

For contact details see
www.sarvari-trust.org


Seed crop of
Sárpo Mira