



**INNOWACYJNA
GOSPODARKA**
NARODOWA STRATEGIA SPÓJNOŚCI

InHort
SKIERNIEWICE

UNIA EUROPEJSKA
EUROPEJSKI FUNDUSZ
ROZWOJU REGIONALNEGO



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Recent achievements of blackcurrant breeding in Poland



Stan Pluta and Edward Żurawicz, Research Institute of Horticulture, Skierniewice, Poland

IBA Conference, Vilnius, LT, 10-12 June, 2015

The Blackcurrant Breeding is conducted at the Department of Breeding of Horticultural Crops of the Research Institute of Horticulture (INHORT) in Skierniewice, Central Poland.

- high plastic tunnel and field cultivar collection at the Pomological Orchard in Skierniewice**
- glasshouse**
- selection fields at the Experimental Orchard at Dąbrowice, Skierniewice**



Organization of Department of Breeding of Horticultural Crops (3 laboratories) – since, 2 April, 2015

DEPARTMENT OF BREEDING OF HORTICULTURAL CROPS

**1. Fruit Genetics
and Breeding Lab.**
(5 research workers)

2. BITECHNOLOGY
(5 research workers)

**3. Genetics and
Breeding of
Vegetable Crops**

Fruit Genetics and Breeding Lab. of INHORT



Dr. Stanislaw Pluta – **blackcurrant**, **gooseberry** (*Ribes sp.*)
and **hig-bush blueberry** (*Vaccinium*)

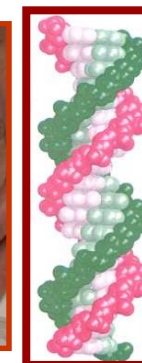
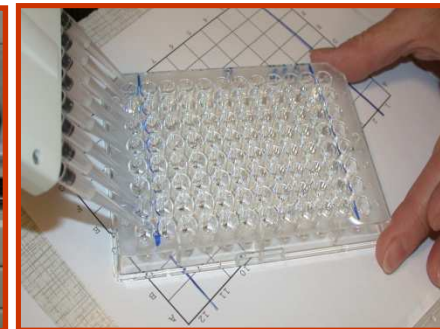
BLACKCURRANT BREEDING PROGRAM (2 Laboratories)

1. Fruit Genetics and Breeding Lab.
 - genetic and methodological studies,
 - releasing of new cultivars



2. Lab. of Unconventional Breeding Methods (Biotechnology)
 - molecular studies

(NOT GMO !!!)



Conventional Breeding



Crossing programs are mainly done under cover (high-plastic tunnel)

- Classical, hybridization breeding methods

1. Crossing of selected parental forms (according to DNA polyphormism, phenotypic evaluation in the collection and genetic studies)
2. Evaluation of F₁ seedling progenies
3. Selection of breeding material (best individual are selected) and propagated
4. Further evaluation and selecting of best clones

Hybridization – traditional cross combination



X



Blackcurrant
(*Ribes nigrum* L.):

‘Foxendown’, ‘Ceres’,
‘Tiben’, ‘Ores’,
‘Ben Gairn’ and others

Blackcurrant
(*Ribes nigrum* L.):

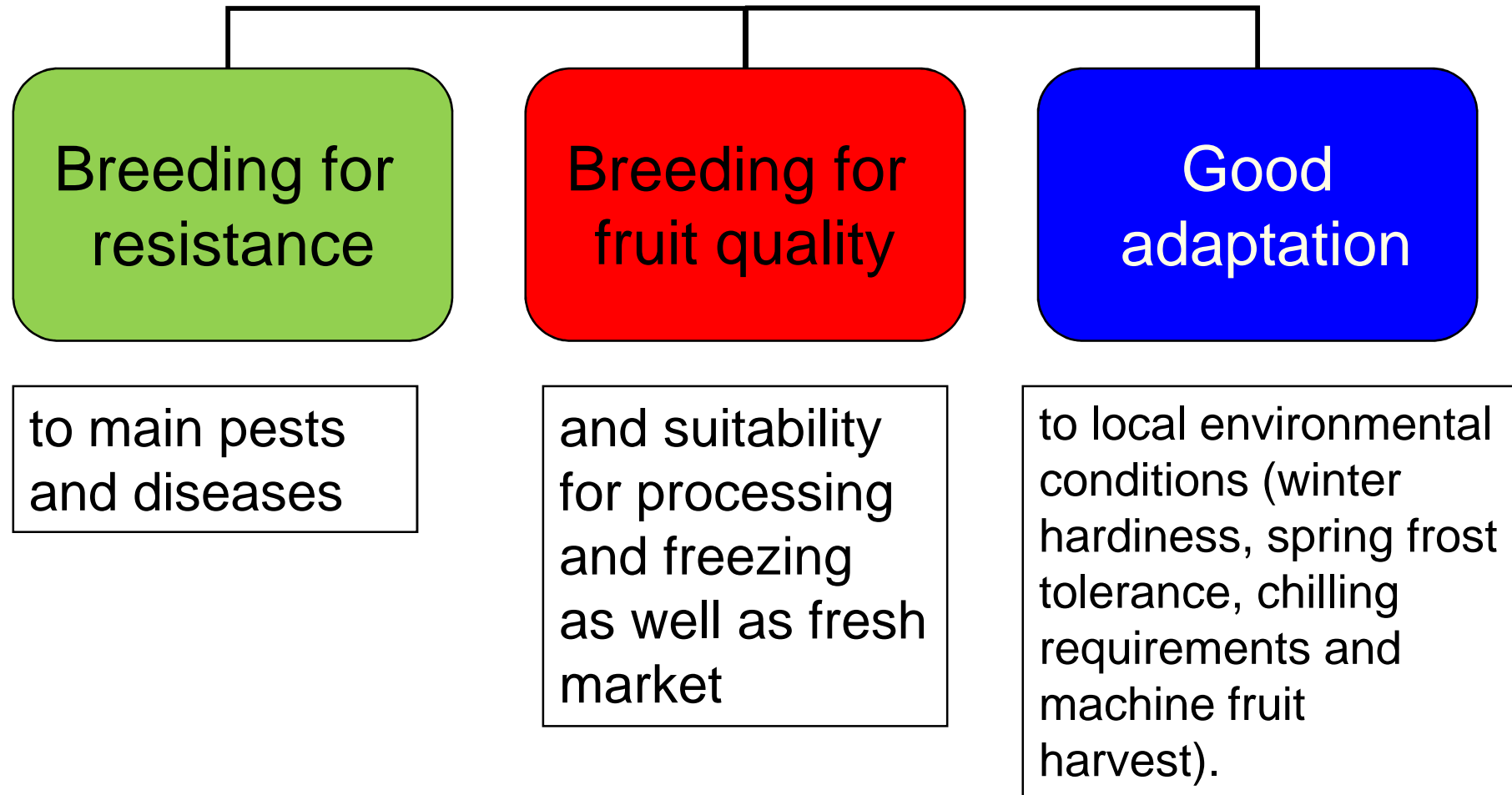
‘Ben Gairn’, ‘Ben Hope’,
‘Foxendown’ ‘Ceres’, ‘Ruben’
and others

Production of seedlings in the glasshouse

January 30 – April 15/30



Aims and breeding efforts



BLACKCURRANT BREEDING - 1986

- 75% for processing and freezing (machine harvest),
- 25% dessert – fresh market (hand picked)



Blackcurrant Breeding

– Desert cultivars for Fresh Market

Progress in increasing of fruit size



0,8-1,0 g

Ojebyn, Titania
Ben Alder
Ben Lomond



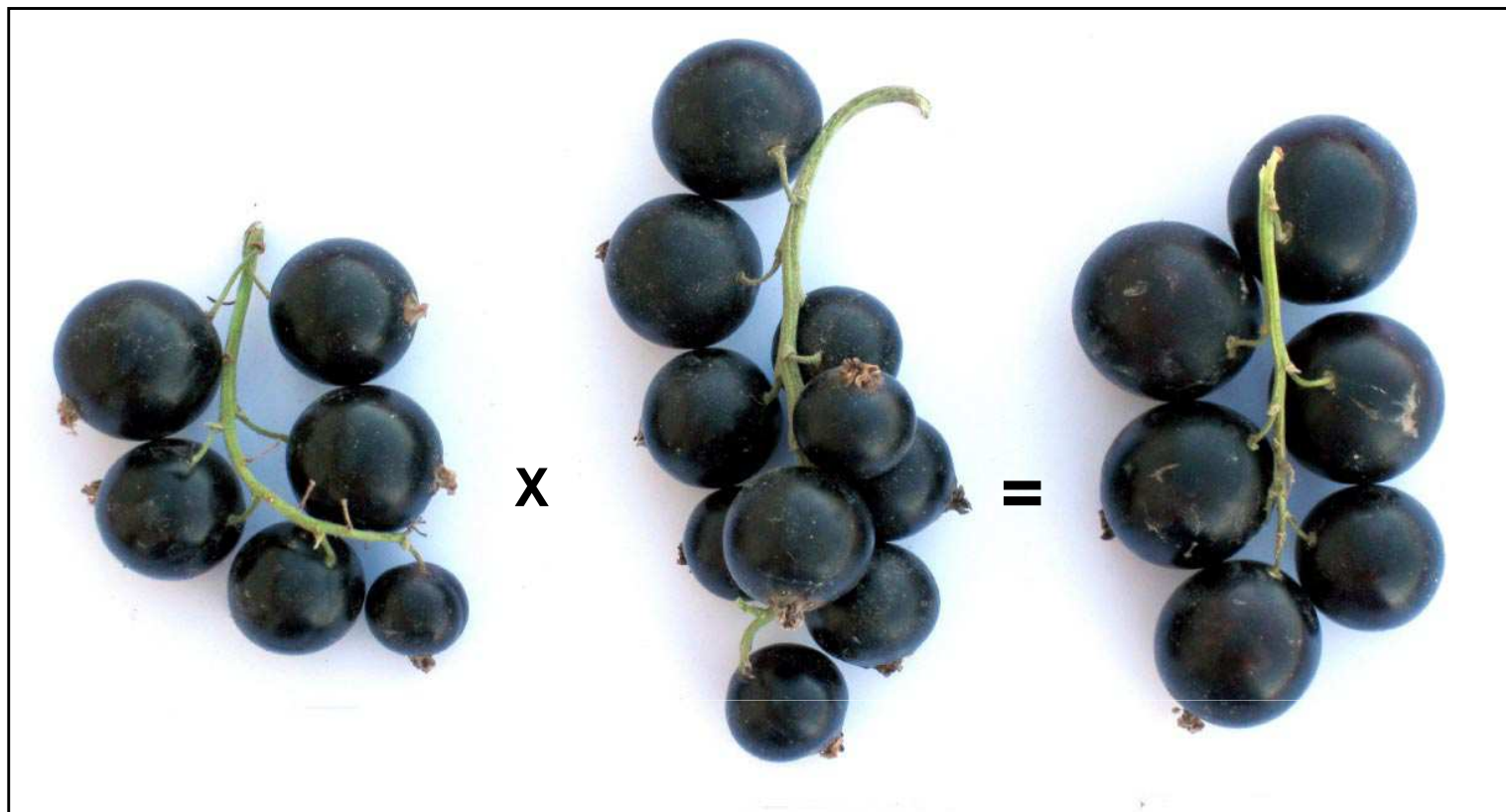
1,2- 1,5 g

Ben Hope
Tines, Ruben
Czeresznieva



2,5–3,0 g

Bona
Big Ben
D 13 B/11



ACHIEVEMENTS - new **Blackcurrant** cultivars released and register into the National List of Cultivars and Plant Breeding Rights (PBR)

2010



2014



All these cultivars are also protected by the PBR on territory of UE till 2025-2030

**The newest blackcurrant cultivars
registered into National List COBORU
(www.coboru.pl)**

2014

'TIHOPE'



Breeding clone numbered PC-425

'POLARES'



Breeding clone numbered PC-7/13

MAIN TRAITS OF NEW BLACKCURRANT CULTIVARS

- **High productivity**
- **Good fruit quality and suitability for processing, freezing and fresh market**
- **Resistance/low susceptibility to pests and diseases**
- **Adaptability for cultivation in Polish weather and soil conditions**
- **Suitability to modern technology of fruit production**



BLACKCURRANT CULTIVARS

‘Gofert’, ‘Polares’, ‘Tihope’

‘GOFERT’

Origin: 'Gołubka' x 'Fertodi-1'

- Ripening time: **early**
- Productivity: **high-very high**
- Fruit suitability: **universal**
- Resistance to: **high to pathogens, fungal diseases**
- Suitability to: **fruit harvesting by machine, and IFP and ECOlogical methods**



‘POLARES’

Origin: S12/3/83 x EMB 1834/113

- Ripening time: **late**
- Productivity: **high**
- Fruit suitability: **very good for processing (concentrate)**
- Resistance to: **gall mite (gen Ce) and powdery mildew**
- Suitability to: **fruit harvesting by machine, and IFP and ECOlogical methods**



‘TIHOPE’

Origin: ‘Titania’ x P9/11/14

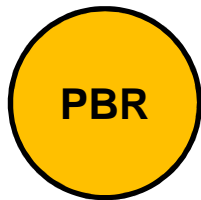
- Ripening time: **mid-early**
- Productivity: **very high**
- Fruit suitability: **processing and freezing**
- Resistance to: **fungal diseases**
- Suitability to: **fruit harvesting by machine, and IFP and ECOlogical methods**



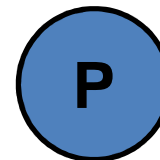
NEW BLACKCURRANT CULTIVARS SUBMITTED FOR PBR in CANADA and PLANT PATENT in the USA - 2014

‘GOFERT’, ‘POLARES’ and ‘TIHOPE’

- **Canadian Food Inspection Agency, Ottawa, Ontario, Canada**
- **US Patent & Trademark Office, Alexandria, Virginia, USA**



Plant Breeder's Rights
CANADA



Plant Patent
USA





Greg Quinn
CurrantC
NY, USA



CULTIVAR	Number of granted licenses in 2011 - 2015
BLACKURRANT	
'GOFERT'	11
POLARES'	7
'TIHOPE' '	8



SUMMARY

We are convinced that the new cultivars will be:

An important carrier of biological progress of blackcurrant production in Poland

Contribute to maintaining of high position of Polish blackcurrant production

Foster its competitiveness, while maintaining plant protection requirements of the environment and principles of safe food production

**THANK YOU
FOR YOUR ATTENTION**



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