

Participatory screening and breeding group „Bauernparadeiser“

Partners:

- Organic farmers
- Organic farmers' association BIO AUSTRIA
- Seed saver's organisation Arche Noah
- Horticultural school and research stations
- BOKU

Objectives:

Improved regionally adapted cultivars for organic farming

- Independence from seed companies
- Improved taste and vitality of cultivars
- Well-working niche products
- Enhancing biodiversity on farms



„Heirloom varieties“ -
Attractive and tasty fruits
a viable alternative to hybrids
for organic farmers?





Challenges

- Most open-pollinating varieties miss standard resistances
- If no rootstocks are used even more danger of root diseases
- Low yield, especially beef tomatoes
- Low storability
- Seedborne diseases
- Plants often grow under suboptimal conditions
 - open field
 - poorly ventilated polytunnels

Diseases

Viruses



Root diseases



Phytophthora infestans



Cladosporium fulvum

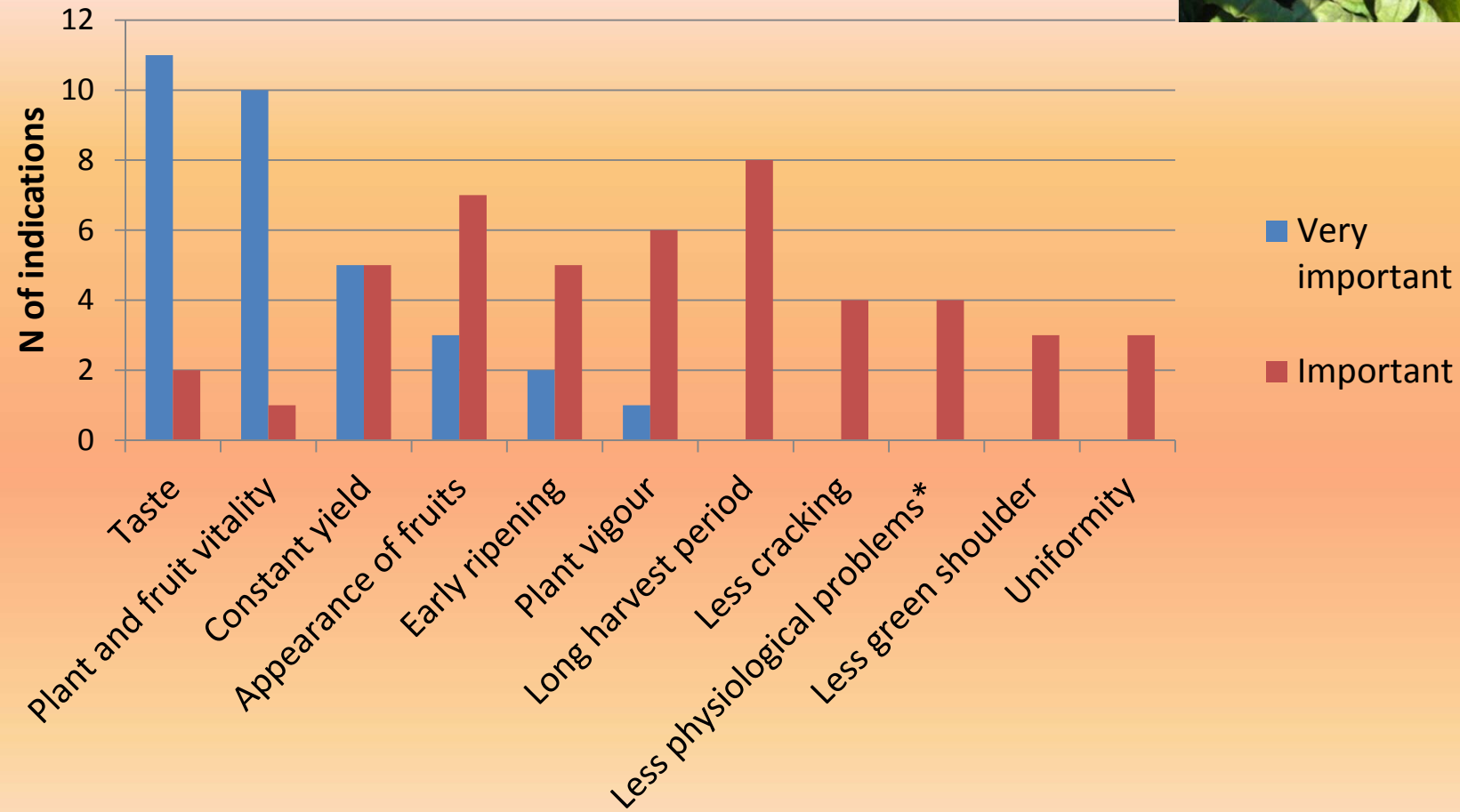


Activities of the group

- Regular meetings & knowledge exchange
- Systematic cultivar screenings including tasting sessions
- Conservation breeding (elite seed of single plants)
- Breeding attempts to gain *Cladosporium*-resistant lines
- Common excursions
- Diagnosis of diseases
- Research in crop management and screening/breeding involving students



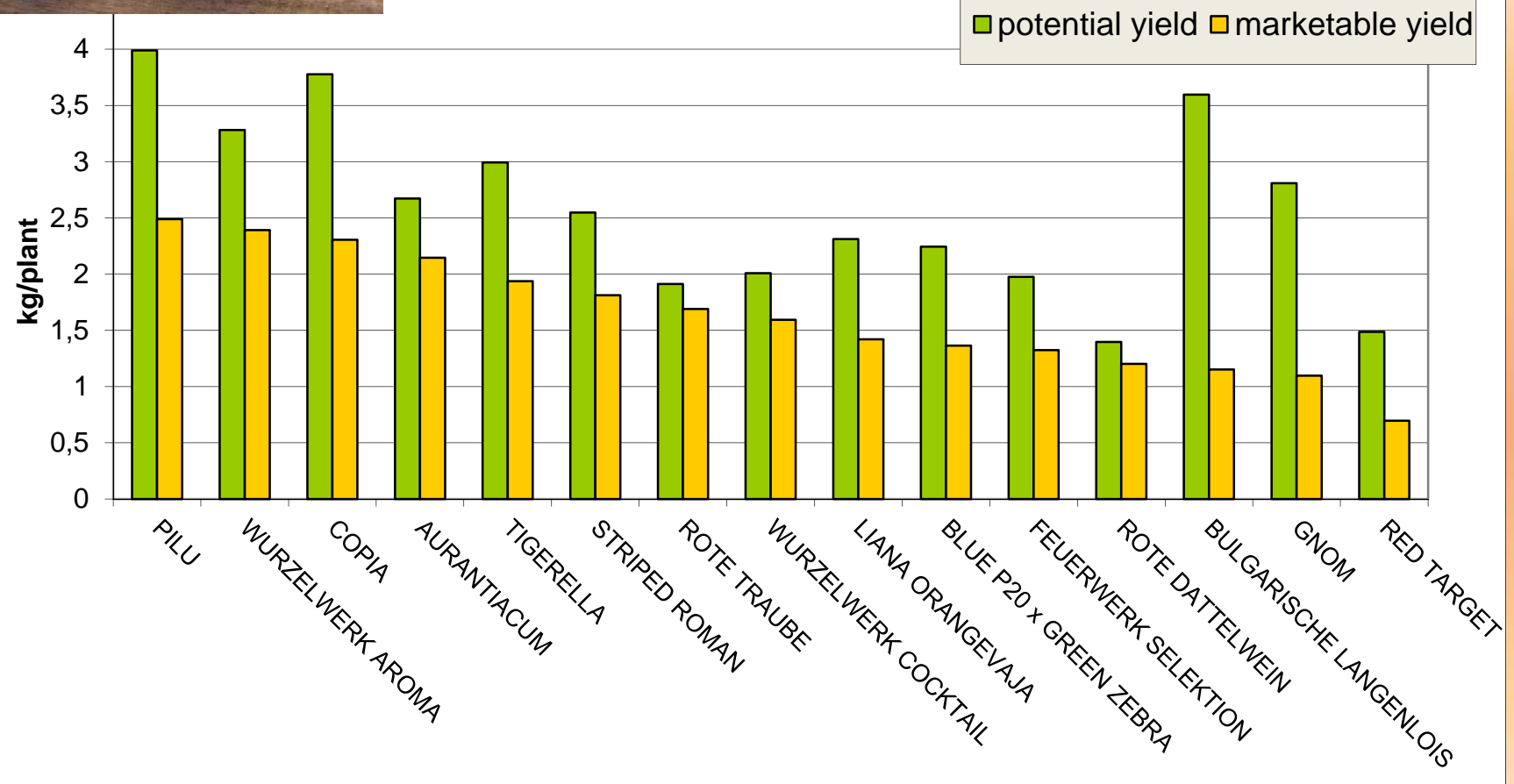
Importance of cultivar traits



* leaf rolling, blossom end rot, loss of flowers etc.



Cultivar screenings



Open space; Horticultural school Langenlois (2012)

Cultivar screenings

- approx. 200 cultivars are characterised
- Some cultivars have low yields, but are still grown due to special fruit characteristics
- Some lines are not stable
 - Single plant selection makes sense
 - aim to improve plant vigour, plant health and uniformity

Resistance to *Cladosporium fulvum*

- Master thesis of Philipp Lammer:
Slight cultivar differences in the susceptibility to *Cladosporium*,
but: quantitative resistance not sufficient
- Breeding:
 - crossings between two lines with the resistance gene Cf-ECP2 and two heirloom varieties
 - F2: 18 plants selected, waiting for disease pressure

CF23 x Mexikanischer Honigparadeiser **F1**



CF23 x Mexikanischer Honigparadeiser

F2



Future prospects

- More focus on farm management in addition to the use of suitable cultivars
- Measures to improve seed quality
- Information day to discuss participatory breeding models in other countries
- Common brand?
- Voluntary engagement has limits
 - funding necessary

**Thanks to:
All members of the group “Bauernparadeiser”!**

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Photos by Philipp Lammer, Franziska Lerch, Elfriede Stopper and Helene Weissinger