

Apricot Breeding Program at Agroscope: high quality and resistant genotypes

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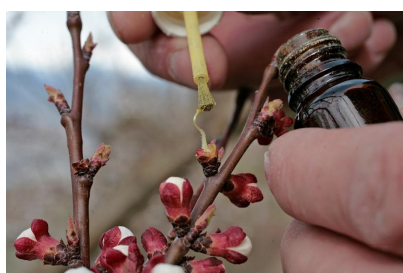
Apricot production context

- Increase of the production in term of surface and cash flow in Switzerland and in Europe since the 80's.
- Swiss demand not covered by the indigenous production.
- More restricted adaptation area for apricot compared to other fruit species. Local conditions are important to define breeding objectives.
- Apricot Breeding Program at Agroscope since 2006.

Objectives of the Apricot Breeding Program at Agroscope

Genetic improvement:

- Fruit quality and slower post-harvest evolution
- Regular production and self-compatibility
- Late flowering and harvest time
- Disease resistance against monilia, Pseudomonas, Xanthomonas, and European Stone Fruit Yellows (ESFY).



Breeding and selection methods

- 5000 controlled crosses per year
- 1000 planted genotypes per year
- Classic selection
- Development of MAS for disease resistances, self-compatibility and fruit quality traits

Comparison with international cultivars

- Heido first protected cultivar
- Comparison of promising genotypes with international novel cultivars (e.g. consumer tests)
- One promising cultivar tolerant against monilia
- One promising cultivar tolerant against Pseudomonas

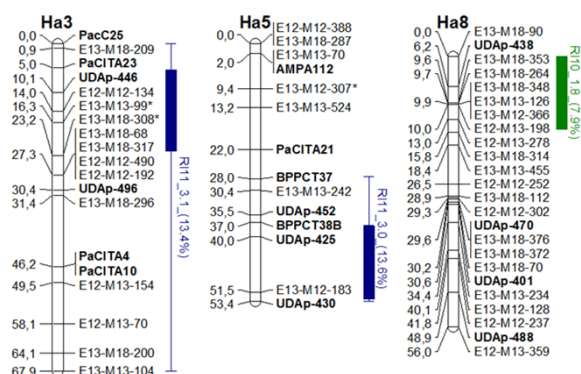


International partnership and collaboration

- Best genotypes tested in many locations in Europe and Switzerland.
- VariCom organizes the marketing of our cultivars
- International collaboration with numerous private and public breeders, more particularly with INRA France for the development and implementation of MAS.

QTL linked to apricot resistance against XAP

- SSRs linkage map
- F1 progeny segregation for *Xanthomonas arboricola* pv. *pruni* (XAP)
- Mapping stable QTL on LG5 linked to apricot resistance against XAP. 3 other regions on LG3, LG5 and LG8 to be confirmed
- Other QTLs linked to tree habitus, to early flowering and to fruit quality have been identified
- Possible to implement MAS in early selection processes



Résumé

- Apricot Breeding Program at Agroscope aims to develop high fruit quality, locally well-adapted and resistant new varieties.
- VariCom organizes the marketing of Agroscope cultivars
- Mapping stable QTL linked to apricot resistance against *Xanthomonas arboricola* pv. *pruni* (Socquet-Juglard et al., 2012)
- Collaboration with INRA France for the development and implementation of MAS