

## Scanning report [Perren Sarah, Agroscope]

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**Country:** Switzerland  
**NUTS 3 region(s)<sup>1</sup>:** CH0 SCHWEIZ/SUISSE/SVIZZERA  
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### Source materials and methodology

The Research Center Agroscope is a public research center funded mostly by the Swiss government. One of its many activities is the testing of new apple and pear varieties. In collaboration with most of the important apple breeders, variety managers and license holders Agroscope is testing new varieties from all over the world. Agroscope evaluates their climatic suitability for growing them in Switzerland, their agronomic potential and marketability.

The EUFRIN descriptor list is used for the agronomic evaluations and the data are stored in an Agroscope database. The variety owners get an annual report as an output of the database. For most of the new apple and pear varieties which are currently being tested we use the EUFRIN testing agreement (last version March 4<sup>th</sup> 2009).

Agroscope is doing in house evaluation of post harvest conditions and diseases, physiology, apple breeding, plant pathology and sensorial evaluation. The expertise of these working groups is used in the higher levels of evaluation allowing an interdisciplinary approach in the precommercial development of a new variety.

Agroscope is involved in the European EUFRIN network and it is also participating at the meetings of the German variety testers and breeders commission "Fachkommission Kernobst im Arbeitskreis Züchtung". These networks allow to exchange information about new varieties between variety testers, which is very useful to deepen the knowledge.

Perren S., Christen D. (2016). Neue Apfel- und Birnensorten: Qualität und Mehrwert. 14. Schweizerischer Obstkulturtag, Agrovina, Martigny.

Egger S., Rombini S., Perren S. (2013). Erste Erfahrungen mit der Apfelsorte SQ159 (Natyra®) – Teil 1. Schweizerische Zeitschrift für Obst- und Weinbau 20/13: 8-11.

Brugger C., Egger S., Rombini S. (2013). Apfelsorte SQ159 (Natyra®) – Teil 2. Schweizerische Zeitschrift für Obst- und Weinbau 21/13: 11-13.

### Best practice findings

#### Variety testing of apples

Apple testing in level 1 is carried out in Wädenswil ZH (410 m asl), whereas the testing of late apple cultivars is carried out in a different climatic area, in Conthey VS (410 m asl). Currently, 90 apple cultivars are being tested in those trial orchards.

In Wädenswil, new scab and/or mildew resistant apple cultivars (currently 30) are planted in a separate orchard. Half of them are treated with a "normal" fungicide program, and the other half with a Low-Residue fungicide program. This allows to evaluate their susceptibility to other fungi like powdery mildew, Marssonina etc. Every year several new apple varieties are planted in level 1. These varieties originate from all over the world. As a reference we plant Topaz, Gala and Golden. After 6 – 8 production years, a first selection made. A variety which doesn't seem to be promising will be skipped.

Best varieties in the first screening will be planted in Level 3. Testing of apples and pears in Level 3 (50 - 100 trees) is carried out in Güttingen and Wülflingen. Depending on the variety special trials will be carried out, as for example improving the fruit, chemical

<sup>1</sup> Please see [ec.europa.eu/eurostat/ramon/nomenclatures/](http://ec.europa.eu/eurostat/ramon/nomenclatures/) for details on NUTS regions, level 3

thinning, fertilisation, fruit quality, ... For testing of ideal storage conditions we work together with another Agroscope research group and the fruit sector.

### **Demands for a new apple variety**

Our goal is to select resistant apples which are productive, firm, and tasty with a good fruit size, appearance, storability and shelf life. If possible, it should be distinguishable from the varieties already on the market.

### **Variety testing of pears**

Pear testing in Level 1 is carried out in Wädenswil as well. Currently, 40 pear cultivars are being tested in this trial orchard. Every year several new pear varieties are planted in Level 1. From each variety 5 trees are planted. A limited treatment program will be carried out in this parcel. 'Conference' will serve as a reference. After 6 -8 production years a first selection will be made.

Varieties which doesn't seem to be promising will be skipped. The top varieties from the first screening will be planted in Level 3 (50 – 100 trees). Depending on the variety we do trials on fruit set or chemical thinning, fertilisation, fruit quality, ... For testing of ideal storage conditions we work together with another Agroscope research group and the fruit sector.

### **Demands for a new pear variety**

We are screening for a red or a red blushed pear which is productive, tasty and that has a good fruit size, a good appearance, a good storability and a good shelf life. If possible, it must be distinguishable from the existing varieties. This new variety should exhibit optimal growing properties under Swiss climate and being resistant against common pests in this area (e.g. fire blight).

### **Challenges of the variety testing in Switzerland**

The challenges in variety testing in Switzerland are similar to other European regions.

- An increasing number of variety owners demands full confidentiality. This is contrast to the public mission of Agroscope.
- Very different starting material (different tree quality or rootstock clone).
- Due to an increasing and rapid demand for varietal innovation the "filter" of variety testing will be bypassed more and more by the big market players, raising the risk of investment for the fruit growers.