Heirloom varieties: Of Divas, Black Princes and Golden Pearmains

Consumers and chefs love heirloom vegetable and fruit varieties. For farmers however their cultivation is demanding and risky. ProSpecieRara has commissioned the FiBL advisors to provide support to farmers and growers – but first the project team itself must rediscover and get to know these old cultivars.

Baselbieter Röteli, Oxheart, Gelbe von Thun, Black Prince: Not only do these tomato varieties have lovely names, they also awaken memories of granny’s garden and promise true tomato flavours. “To maintain heirloom varieties means to maintain agricultural heritage and increase agrobiodiversity”, says Martin Koller, vegetable production specialist at FiBL. “Oxheart for example is a bit of a diva – it wants to be pampered”, he explains. This variety is susceptible to blossom end rot (black spots on the fruit caused by calcium deficiency), irregular coloration, cracking at the stem node, and their leaves are susceptible to tomato leaf mold.

If heirloom varieties are once again to be grown at a large scale they must also be sold. It is for this reason that Swiss supermarket retailer Coop together with ProSpecieRara (PSR) have for the past ten years been making efforts to get these heirloom cultivars back onto the shop shelves. PSR maintains a repository of more than one thousand old garden and tillage crops. Gardeners work as seed-saving volunteers to maintain and bulk up the varieties. However, this in-situ conservation in home gardens is not sufficient for commercial cropping.
Scaling up

The project team, which consists of representatives of PSR, Coop, Terraviva AG, Sativa-Rheinau AG, FiBL and commercial producers, selects varieties from PSR’s living seed bank that differ from modern varieties by their colour, taste and shape.

As a first step, the project team tests a selection of PSR varieties in small-scale preliminary trials in order to gain pointers on their cultivation. In the following growing trials the team assesses each variety all the way from the field to the shop shelf. In addition to issues of cropping practices and logistics the team also looks at how best to present these rare marvels in the shops. Subsequently, the Swiss seed company Sativa-Rheinau engages in the professional propagation and bulking up. At present, roughly ten organic vegetable producers grow PSR varieties for Coop. Despite higher prices however this production is still risky for the farmers. A fund was therefore established to compensate for possible yield losses during the trial phase.

Safeguarding and utilizing old knowledge

Since 2006 Coop has also been selling old apple varieties. FiBL fruit experts Franco Weibel and Andi Häseli are assessing which of the varieties are suited to both modern cropping systems and modern consumers. As in the case of the heirloom vegetables, the project team at first had to narrow down their list from the 1800 apple cultivars grown by PSR in 160 orchards. “We had to draw on the accumulated experience of the PSR orchard managers and pomologists”, Franco Weibel explains. Especially Meinrad Suter’s display garden in Baden turned out to be a real treasure trove. “In his orchard we were able to learn about the production and storage characteristics of many old cultivars and we were able to assess their acceptance by today’s consumers through numerous tasting sessions”, Andreas Häseli adds. The knowledge of old cultivars has very nearly been lost.

With the help of Frits Brunner, one of Switzerland’s most foremost experts on apple cultivars, the project team selected fifteen varieties for extended production on organic farms. The aim is to ensure that for each of the taste groups at least one variety is available: The Berner Rosen apple was selected as the main variety in the mild to sweet group; the Golden Pearmain apple is for those who like a strong and spicy flavour while the Sauergrauch apple is decidedly acidic. Moreover, there should be sufficient numbers of varieties for each of the sales seasons. “At present we have enough autumn varieties but what is lacking are old varieties with good keeping qualities”, Andi Häseli explains. Additional organic orchardists who will produce these varieties are also still needed.

About 100-150 tons of apples from old varieties can be sold annually on the Swiss market, but only thirty percent of the apples produced as part of this project are cultivated in orchards under organic management. For the first six years of the yield period Coop offers a sales guarantee as well as a price premium. Production is however demanding and only suits experienced growers. Nevertheless the project team is optimistic and all involved are convinced that the best way to maintain old varieties is to reintroduce them into a diverse and attractive product range.

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Funded by: Coop Sustainability Fund

With the aid of public tasting sessions, heritage apple varieties were selected that hold visual and culinary appeal for the modern consumer.
Copper is still used as the prime treatment for grapevine downy mildew. Matthias Hamburger (University of Basel, left) makes extracts of plants and microorganisms available to Lucius Tamm (FiBL). More than 1600 extracts are tested in the laboratory for their effectiveness in controlling downy mildew and other phytopathogens. Modern imaging methods are used to determine the degree to which the extracts can impede the pathogens’ growth. In glasshouse and outdoor field trials the most promising substances are subsequently assessed in terms of their suitability for practical application.