Scanning report
[Marianne Bertelsen, AU]

Author:	Marianne Bertelsen, AU, Marianne.bertelsen@food.au.dk +45 87158328
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	[Y1 report due May 2016 for the period 03-16 to 05-16
	Y2 report due May 2017 for the period 06-16 to 05-17
	Y3 report due May 2018 for the period 06-17 to 05-18]

Source materials and methodology

AU (former Danish Institute of Agricultural Science) has conducted research in fruit production at Aarslev since 1982. AU has been a member of the EUFRIN network since it was founded in 1993.

At AU-Aarslev is the main site in Denmark for variety testing of fruit cultivars. AU-Aarslev has relevant laboratory facilities and a 20 ha research orchard of which half is planted with fruit cultures currently grown in Denmark. In recent years focus has increasingly been on organic production and half the experimental orchard is de-facto run organically. Varity testing has traditionally been conducted in all major fruit crops. However, in the last ten years all variety testing has been project-funded and therefore activities has varied between years, and focus has been on the largest fruit crops: apple, black currant and sour cherries.

Outside of AU: The Copenhagen University (KU) is holding the national collection of old fruit varieties and is responsible for their up keeping and researchers at KU have previously done testing of apple varieties suitable for cider production.

Source materials for the report:

Bertelsen, Marianne (2014) Nye sorter til økologisk æbleavl. *ICROFSnyt*, 29 September 2014, pp. 9-10.

Bertelsen, Marianne (2014) Nye æblesorter til økologisk dyrkning. Poster at: Sydhavsøernes Frugtfestival, 20. og 21. september 2014.

Jensen, Martin 2014. http://dca.au.dk/aktuelt/nyheder/vis/artikel/oekologiske-surkirsebaer-skal-hjaelpes-paa-vej/

Bertelsen, Marianne (2012) Nye æblesorter til økologien. *Økologi & Erhverv*, 16 November 2012, 2012 (511)

Pedersen, HL & Andersen, L 2012, 'De bedste solbærsorter til økologisk dyrkning' *Økologisk Nyhedsbrev*, s. 16-17.

Best practice findings

Variety testing apple and pears

In recent years 27 new apple cultivars from all over the world have been screened for their suitability to organic production. From each variety 20 trees on M9 were planted in the organic research orchard at AU. Only organic compounds are used to protect against pests and diseases, and sprays are limited to the pre fruit set period, allowing natural differences in scab susceptibility to become apparent while not jeopardizing the entire planting. Trees are assessed for occurrence of diseases and natural tree growth is described. Initially fruits are harvested at 2-3 different harvest dates and yield and fruit size is recorded. Fruits are stored

[1] Please see ec.europa.eu/eurostat/ramon/nomenclatures/ for details on NUTS regions, level 3

in standard cold storage and quality assessed two times during the storage period. Finally fruits are put shelf-life and firmness is measured after 7-10 days.

We are looking for apple varieties that are robust and suitable for organic production. Scab resistance has been broken in all of the Vf resistant varieties planted and tested in Denmark and even varieties with the scab resistance originating from Antomovka like Angold show scab lesions. Fruit quality is a priority and in particular we are look for varieties that are sweeter than the existing varieties in order to provide growers with alternatives to imported sweet varieties like 'Pink Lady'- which cannot be grown in Denmark. Suitability to the climate is another important criterion – and the reason why local variety testing is of relevance: A lot of varieties developed in more southern countries require longer growth periods or higher temperatures than can be met in Denmark and several of the recently tested varieties had to be discarded for that reason.

In 2015 10 varieties of the original 27 were chosen for a in a second screening: Your Choise, Sansa/Galak, Maribelle/Lola ®, TellsA931/Galant, Tells47/05, HL783, Fragrance, A987-74, NZ-4 and Poul Sloth.

In 2015 two new Norwegien pear varieties have been planted: Kristina and Celia

Variety testing Black Currents

Black currents has is a major berry crop in Denmark. Variety testing in black currants has been continuous at AU for many decades. Focus is on yield, ease by which the bushes can be harvested by maschine and how well mechanical harvesting is tolerated by the fruits. Fruit quality is analyzed sugars/acid and anthocyanins every year and vitamin-C a couple of time during the trial period. At present 20 varieties are being tested, the majority of crops originate from Scottish Crop Research Institute (SCRI). Approximate 10 years ago black current varieties were sourced from a wider range of countries, and this will be repeated whenever funding is available.

Variety testing Sour cherries

Ten years ago a large breeding program involving sour cherries was conducted at AU-Aarslev and more than 3000 new progenies were sown. At present a project aimed at developing new techniques (MNR-metabolomics) to identify varieties with robustness against diseases is being conducted.

Variety testing 'new crops'

Currently several varieties of the following species : Amelanchier, Lonicera caerulea, Elaeagnus multiflora, Cornus Mas, Lysium barbarium and Prunus cerasus is being planted in a 4- year project where the focus is on suitability and tolerance to machine harvest.