Scanning report
Vercammen Jef, pcfruit

***Project title (native language):** **EUFRUIT: Europees Fruit Netwerk**

***Project title (English):** **EUFRUIT: European Fruit Network**

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Section A. Summary for EIP dissemination

***Keywords:** Variety testing, stone fruits, sweet cherries, apricots, Japanese plums

***Main geographical location:** BE221 (arr. Hasselt)

Other geographical locations: BE211 (Arrondissement. Antwerpen), BE212 (Mechelen), BE213 (Turnhout), BE222 (Arr. Maaseik), BE223 (Tongeren), BE231 (Aalst), BE232 (Dendermonde), BE233 (Eeklo), BE234 (Gent), BE235 (Oudenaarde), BE236 (Sint-Niklaas), BE241 (Halle-Vilvoorde), BE242 (Leuven), BE251 (Brugge), BE253 (Ieper), BE254 (Kortrijk), BE255 (Arr. Oostende), BE256 (Arr. Roeselare), BE257 (Tielt), BE258 (Veurne)

***Summary (native language):**

De belangrijkste onderzoeksthema's voor **zoete kersen** in pcfruit vzw pps zijn: **rassenonderzoek**, onderstammen, plant- en snoeisystemen, oogstzekerheid (barsten, overkappingen), bemesting en vruchtkwaliteit.

Het assortiment bij zoete kersen wordt best aangevuld met een zelfbevruchtend ras dat niet vorst- en barstgevoelig is. Het ideale ras moet productief zijn, vroeg of laat rijp zijn, niet te sterk groeien en een goede vruchtkwaliteit (hard, dik en donker) en smaak hebben.

In 2017 hebben we 68 kersenrassen in de eerste screening staan. Na 4 of 5 productiejaren wordt een eerste selectie gemaakt. Rassen die niet voldoen worden gerooid. Van de beste rassen worden 20 tot 25 bomen geplant in een tweede screening. Afhankelijk van het ras gebeuren proeven naar bestuiving, bemesting en barsten. In 2017 hebben 5 nieuwe kersenrassen in deze tweede screening staan nl. Folfer, Grace Star, Korvik, Poisdel and Rubin. In 2016 hadden we ook Samba en Hertford in de tweede screening staan. Mogelijke kandidaten om in de tweede screening geplant te worden zijn Areko en Penny.

Mede door de aanhoudende crisis in de appelteelt wordt de vraag gesteld of er naast peren en kersen nog alternatieven zijn. In de eerste plaats wordt hier gedacht aan **abrikozen**. Enerzijds hoopt men op deze manier de arbeid en het risico te spreiden. Anderzijds speelt ook de klimaatwijziging een rol. Daarom werden in het voorjaar 2015 de eerste abrikozen aangeplant op pcfruit - Proeftuin pit- en steenfruit. Op dat moment werden ook **Japanse pruimen**, hazelnoten en okkernoten geplant.

Voor abrikozen is het doel om na te gaan of de gekozen rassen geschikt zijn voor onze klimatologische omstandigheden. Hierbij hebben we vooral gezocht naar rassen die laat bloeien (en daardoor minder gevoelig zouden moeten zijn voor lentenachtvorst) en die een laat pluktijdstip (augustus) hebben, zodat de pluk na Sweetheart en voor Conference valt. Op deze manier is er een spreiding van de arbeid. Bovendien is er dan ook geen overlapping met de ingevoerde rassen van de Zuiderse landen.

Voor pruimen vraagt de markt naar dikke pruimen. Een mogelijke piste hier zijn de **Japanse pruimen**.

Summary (english):

The main research topics for **sweet cherries** at pcfruit npo pps are: **variety testing,** rootstocks, planting and training systems, crop security (cracking, covering systems), fertilisation and fruit quality.

The sweet cherry assortment is best completed with a self-fertile variety that is not susceptible to frost or cracking. The ideal variety should be productive, early or late ripening, low in vigour and have a good fruit quality (firm, large and dark) and a good flavour.

In 2017 we have 68 sweet cherry varieties in the first screening. After 4 to 5 production years a first selection is made. Varieties that are not good enough are grubbed. From the best varieties in the first screening mostly 20 to 25 trees are planted in a second screening (Level 2). Depending on the variety we do trials on pollination, fertilization and cracking. In 2017 we have 5 new cherry varieties in the second screening: Folfer, Grace Star, Korvik, Poisdel and Rubin. In 2016 we had also Samba and Hertford in the second screening. Candidates to be planted in the second screening are Areko and Penny.

Because of the continuing crisis in the apple growing the question is posed whether there are, in addition to pears and sweet cherries, other alternatives. In the first place, it is thought here about apricots. On the one hand it is hoped in this way to spread the work and risk. On the other hand, climate change also plays a role. Therefore we have planted the first **apricots** in spring 2015. At that time also **Japanese plums**, hazelnuts and walnuts were planted at the Experimental Garden for Pome and Stone fruits (PPS).

For **apricots** the aim is to determine whether the selected varieties are suitable for our climatic conditions. Here we especially have looked for varieties with a late flowering time (and therefore should be less sensitive to spring frosts) and a late picking time (August), so the harvest is later than Sweetheart and earlier than Conference. In this way there is a spreading of labor. Moreover, there is no overlap with the imported varieties of the Southern countries.

For plums the market is asking for large fruits. A possible way are the **Japanese plums**.

Section B. Project information

***Project coordinator:**	Michelle H. Williams; Aarhus University, Department of Food, Kirstinebjergvej 10, 5792 Aarslev, Denmark; mw@food.au.dk; +45 25170049
***Project period:**	2016 - 2019
***Project status:**	Ongoing
***Funded by:**	Horizon 2020
***Total budget:**	€1.8m

***Geographical regions:** DK011 Copenhagen, DK012 Copenhagen and its environs, DK013 North Zealand, DK014 Bornholm, DK021 East Zealand, DK022 West- and South Zealand, DK031 Funen, DK032 South Jutland, DK041 West Jutland, DK042 East Jutland, DK050 North Jutland, BE211 (Arrondissement. Antwerpen), BE212 (Mechelen), BE213 (Turnhout), BE221 (Hasselt), BE222 (Arr. Maaseik), BE223 (Tongeren), BE231 (Aalst), BE232 (Dendermonde), BE233 (Eeklo), BE234 (Gent), BE235 (Oudenaarde), BE236 (Sint-Niklaas), BE241 (Halle-Vilvoorde), BE242 (Leuven), BE251 (Brugge), BE253 (Ieper), BE254 (Kortrijk), BE255 (Arr. Oostende), BE256 (Arr. Roeselare), BE257 (Tielt), BE258 (Veurne), BE310 (Nivelles-Nijvel), BE331 (Huy-Hoei), BE332 (Liège- Luik), BE334 (Waremme-Borgworm), BE335 (Verviers), FR8 Méditerranée; FR81 Languedoc-Roussillon, FR6 SUD-OUEST, FR512 Maine et Loire, FR611 Dordogne, FR812 Gard, DE6 (Hamburg), DE8 (Mecklenburg-Vorpommern), DE9 (Niedersachsen), DEF0 (Schleswig-Holstein), DEE0 (Sachsen-Anhalt), DEA (Nordrhein-Westfalen), DE111, DE112, DE113, DE114, DE115, DE116, DE117, DE118, DE119, E11A, DE11B , DE11C, DE11D, DE121, DE122, DE123, DE124, DE125, DE126, DE127,DE 128, DE129, DE12A, DE12B, DE12C, DE131, DE132, DE133, DE134, DE135, DE136, DE137, DE138, DE139, DE13A, DE141, DE142, DE143, DE144, DE145, DE146, DE147, DE148, DE149, DE600 Hamburg, DE932 Cuxhaven, DE933 Harburg, DE939 Stade, DEF09 Pinneberg, NL1-NL4 + NLZ Holland; NL 224 zuidwest Gelderland, NL 226 Arnhem/Nijmegen, NL230 Flevoland, NL310 Utrecht, NL321 Kop van Noord-Holland, Nl322 Alkmaar en omgeving, NL338 oost Zuid-Holland, NL33A zuidoost Zuid-Holland, NL341 Zeeuws-Vlaanderen, NL342 overig Zeeland, Nl411 west Noord-Brabant, NL413 noordoost Noord-Brabant, NL414 zuidoost Noord-Brabant, NL421 noord Limburg, NL422 Midden-Limburg, NL423 zuid Limburg, ES620 Murcia, UKG11 Herefordshire, UKG12, Worcestershire, UKH12 Cambridgeshire, UKH16 North and West

Norfolk, UKH17 Breckland and South Norfolk, UKJ22 East Sussex, UKJ35 South Hampshire, UKJ36 Central Hampshire, UKJ37 North Hamphshire, UKJ41 Medway, UKJ42 Kent, UKJ43 Kent Thames Gateway, UKJ44 East Kent, UKJ45 Mid Kent, UKJ46 West Kent, ES618 Sevilla, ES511 Barcelona, ES512 Gerona, ES513 Lérida, ES514 Tarragona, CH0 Schweiz/Suisse/Svizzera, ITH51-59 Emilia Romagna region, ITH10 Bolzano-Bozen, HU101 Budapest, HU102 Pest, RO111, RO112, RO113, RO114, RO115, RO121, RO122, RO123, RO124, RO125, RO126, RO211, RO212, RO213, RO214, RO215, RO216, RO221, RO222, RO223, RO224, RO225, RO226, RO311, RO312, RO313, RO314, RO315, RO316, RO317, RO321, RO322 RO411, RO412, RO413, RO414, RO415, RO421, RO422, RO423, RO424. HU101, HU102, LT001 Alytaus apskritis, LT002 Kauno apskritis, LT003 Klaipėdos apskritis, LT004 Marijampolės apskritis, LT005 Panevėžio apskritis, LT006 Šiaulių apskritis, LT007 Tauragės apskritis, LT008 Telšių apskritis, LT009 Utenos apskritis, LT00A Vilniaus apskritis.

Project web page: http://www.eufrin.org/index.php?id=55

***Project Objectives (native language):**

1. Oprichting van een Europees netwerk voor de fruitteelt
2. Ontwikkelen en implementeren van een systematische aanpak voor het scannen en synthetiseren van bestaande wetenschappelijke en praktische kennis.
3. Opstarten van een permanente dialoog met Europese (EU), nationale en regionale beleidsmakers.
4. Identificeren en ondersteunen van nieuwe prioritaire gebieden voor onderzoek door voortdurend te monitoren en door bestaande en toekomstige onderzoeks- en innovatieactiviteiten te analyseren.

Project Objectives (English):

1. Establish a European network focused on the fruit sector.
2. Develop and implement a systematic approach for scanning and synthesizing existing scientific and practical knowledge.
3. Establish an ongoing dialogue with relevant EU, national and regional policy bodies.
4. Identify and support new priority areas of research by continually monitoring and analysing existing and upcoming research and innovation activities.

***Project partners:**

1. Aarhus University, Department of Food Science (Denmark) • AU
2. Research Station for Fruit npo (Belgium) • Pcfruit
3. Centre Technique Interprofessionnel des Fruits et Légumes (France) • CTIFL
4. Obstbauversuchsanstalt Jork (Germany) • OVA
5. Stichting Wageningen Research (Netherlands) • WR
6. ~~East Malling Research (United Kingdom) • EMR~~ (terminated 08-02-2016)
7. Institut de Recerca i Tecnologia Agroalimentàries (Spain) • IRTA
8. Federal Department of Economic Affairs, Education and Research (EAER), acting through Agroscope Institute of Plant Sciences (Switzerland) • Agroscope
9. Laimburg Research Centre for Agriculture and Forestry (Italy) • Laimburg
10. University of Agronomic Sciences and Veterinary Medicine of Bucharest (Romania) • USAMV
11. National Agricultural Research and Innovation Centre Fruitculture Research Institute (Hungary) • NARIC
12. Lithuanian Research Centre for Agriculture and Forestry (Lithuania) • LRCAF
13. Assemblée des Régions Européennes Fruitières, Légumières et Horticoles (France) • AREFHL
14. Variety Innovation Consortium South Tyrol (Italy) • SKST
15. Freshfel Europe (Belgium) • FRESHFEL
16. Elbe-Obst Erzeugerorganisation r.V. (Germany) • EO
17. Fruitconsult BV (Netherlands) • FC
18. University of Greenwich (United Kingdom) • UoG
19. University of Hohenheim (Germany) • UHOH
20. Università di Bologna (Italy) • UNIBO
21. Institut National de la Recherche Agronomique (France) • INRA
22. NIAB EMR (new 09-02-2016)

Section C. Annex: Scanning report[1]

Scanning report
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Country: Belgium

NUTS 3 region(s)[2]: BE211 (Arrondissement. Antwerpen), BE212 (Mechelen), BE213 (Turnhout), BE222 (Arr. Maaseik), BE223 (Tongeren), BE231 (Aalst), BE232 (Dendermonde), BE233 (Eeklo), BE234 (Gent), BE235 (Oudenaarde), BE236 (Sint-Niklaas), BE241 (Halle-Vilvoorde), BE242 (Leuven), BE251 (Brugge), BE253 (Ieper), BE254 (Kortrijk), BE255 (Arr. Oostende), BE256 (Arr. Roeselare), BE257 (Tielt), BE258 (Veurne)

WP no. and title: WP2 – Performance of new fruit varieties

Date: 20/03/2017

Source materials and methodology

Pcfruit npo was started in 1997 as a coordinating structure of three former research institutes and experimental gardens, all specialised in fruit growing and located in Sint-Truiden, the heart of the fruit growing area of Belgium. The success of pcfruit is due to the combination of applied scientific research, demonstration activities to growers and services for industry and fruit growers at one central location with suitable infrastructure like labs, greenhouses, storage facilities, plastic tunnels, shelters and warehouses and orchards.

In pcfruit new and existing technologies, techniques and varieties are permanently evaluated and judged on their added value to fruit growing. Finally, the individual fruit growers are assisted in the introduction of new technologies and sustainable production methods. A close relationship with individual growers and grower associations exists, which benefits transfer of research results or information.

It is the task of the Experimental Garden for Pome and Stone fruits (PPS) to test and demonstrate new developments of the scientific research on apples, pears and **sweet cherries**. The main topics for sweet cherries are: **variety testing,** rootstocks, planting and training systems, crop security (cracking, covering systems), fertilisation and fruit quality.

Pcfruit npo is since the start in 1993 member of the EUFRIN network. Pcfruit participated in the COST Action FA1104 ”Sustainable production of high quality cherries for the European market” (16/04/2012-15/04/2016). Out of this project the EUFRIN Working Group ”Sweet and sour cherries” is established. Pcfruit npo is also participating in this Working Group. These networks allow an exchange of information between variety testers, which is very useful to enlarge the knowledge around new sweet cherry varieties.

Because of the continuing crisis in the apple growing the question is posed whether there are, in addition to pears and sweet cherries, other alternatives. In the first place, it is thought here about apricots. On the one hand it is hoped in this way to spread the work and risk. On the other hand, climate change also plays a role. Therefore we have planted the first **apricots** in spring 2015. At that time also **Japanese plums**, hazelnuts and walnuts were planted at the Experimental Garden for Pome and Stone fruits (PPS).

The source materials for this scanning report are amongst others:

Claes N., 2015. Aanbevolen en nieuwe kersenrassen. Fruitteeltnieuws 25(05) blz. 4-5.
Vercammen J., and Vanrykel T., 2014. Testing of Sweet Cherry Varieties in Belgium. Proceedings of the Sixth International Cherry Symposium: p. 265-270.
Vercammen J., 2016. Zijn abrikozen in ons klimaat een alternatief? Fruitteeltnieuws 29(11) blz. 16-17.
Vercammen J., 2016. Welke zoet kers verkiest de consument? Fruitteeltnieuws 29(18) blz. 14-15.

[1] Equivalent to ‘final report’ in EIP-AGRI format.
[2] Please see ec.europa.eu/eurostat/ramon/nomenclatures/ for details on NUTS regions, level 3

Best practice findings

Variety testing of sweet cherries

The assortment is best completed with a self-fertile variety that is not susceptible to frost or cracking. The ideal variety should be productive, early or late ripening, low in vigour and have a good fruit quality (firm, large and dark) and a good flavour.

Every year several new sweet cherry varieties are planted in the first screening. These varieties are from all over the world. From each variety we plant 3 trees on Gisela 5. This way we are certain that the trees rapidly come in production and that we have a (good) production every year. As reference we plant always Kordia.

The evaluation of the new cherry varieties is conducted according to the Cherry Descriptor List, as compiled by the "International Board for Plant Genetic Resources" (IBPGR). We look at the production (kg/tree), fruit size (mm), fruit weight (g), fruit quality (firmness (g/mm), sugar content (°brix) and acidity (g/l/), taste (1-9), % cracking on the tree (%), cracking index (1-100) and storability and shelf life. Annually a report is sent to the breeders/licensors.

In 2017 we have 68 sweet cherry varieties in the first screening. After 4 to 5 production years a first selection is made. Varieties that are not good enough are grubbed. From the best varieties in the first screening mostly 20 to 25 trees are planted in a second screening (Level 2). Depending on the variety we do trials on pollination, fertilization and cracking. In 2017 we have 5 new cherry varieties in the second screening: Folfer, Grace Star, Korvik, Poisdel and Rubin. In 2016 we had also Samba and Hertford in the second screening. Candidates to be planted in the second screening are Areko and Penny.

Variety testing of other stone fruits

For **apricots** the aim is to determine whether the selected varieties are suitable for our climatic conditions. Here we especially have looked for varieties with a late flowering time (and therefore should be less sensitive to spring frosts) and a late picking time (August), so the harvest is later than Sweetheart and earlier than Conference. In this way there is a spreading of labor. Moreover, there is no overlap with the imported varieties of the Southern countries.

In 2017 we have 13 apricot varieties in test: 6 on Weiwa (Kioto, Vertige, Bergeron, Frisson, Helena du Roussilon Aviera and Candide), 4 on Wavit (Harogem, Tardif de Tain, Carmingo Faralia and Lotte) and 3 numbers on St.-Julien A.

For plums the market is asking for large fruits. A possible way are the **Japanese plums**. At the moment we have planted 2 varieties (Crimson Glo and Fortune) on MRS 2/5.

Challenges and gaps

There are some important challenges and gaps for stone fruit growing, especially for sweet cherry growers:

- As for new apple and pear varieties some new cherry varieties are not longer available for all cherry growers, because they are launched as a club variety
- Novolties are planted without proper testing
- Infestation of all stone fruit species by Drosophila suzukii
- Infestation of sweet cherries by Little Cherry Virus
- Sweet cherries are a small crop, which means that generally there are little products available to control pests and diseases
- Most of the Belgian cherry orchards are planted without plastic covering