



EUFRIN Working Group “Apple & Pear Variety & Rootstock Testing”: A common way to evaluate new apple and pear varieties in Europe



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Proeftuin pit- en steenfruit



Topics



- **EUFRIN**
 - EUFRIN
 - Working Group “Apple & Pear Variety & Rootstock Testing”
 - Testing Agreement
- **EUFRUIT**
 - Partners
 - 5 WP’s + (assistant)-leaders
 - WP2: Performance of new fruit varieties
 - Synthesis scannings
- **Variety testing in Belgium**



EUFRIN





What is **EUFRIN** ?

European Fruit Research Institutes Network

- Founded in 1993 in Bonn (Germany)
- European research institutes from 21 countries with significant fruit research activities
- Informal voluntary organisation
- Board meeting every year in Brussels
- Structured in **12 working groups:**

„Apple & Pear Variety & Rootstock Testing“

- More information: www.eufrin.org



Apple & Pear Variety & Rootstock Testing

- First meeting: Aarslev (1996) – 17 participants / 10 countries
- 2016: 25 institutes – 15 countries
- Chair: Jef Vercammen (pcfruit)
- Secretary: Walter Guerra (Laimburg)

- Meeting on a 2 year base (next meeting in Baladran (F) in March 2017)



Apple & Pear Variety & Rootstock Testing

- Aim: Serious and competent testing of new varieties and rootstocks of apples with a proven unified descriptor list in a wide range of climate, based on a fair balanced experimental contract.
- Main goals: Exchange of information and experience about new apple and pear varieties and rootstocks (confidentiality agreement).
- First work: Development of a proven descriptor list for apple and pear varieties.
- Recent work: Standardized experimental contract for variety testing purposes.



Experimental contract (1)

- First impulse: Meeting Wädenswil (CH) 2001
- Since then continued development of the contract (Weinsberg (D) 2002, Bologna (It) 2003, Laimburg (It) 2005)
- Final meeting of sub-working group March 2006 at Randwijk (NL) (Gondy Peppelmann, Henk Kemp, Lidwien Dubois, Walter Guerra, Simon Egger, Jef Vercammen, Rolf Stehr)
- Since then 3 documents available:
 - Final EUFRIN Testing Agreement
 - EUFRIN-Agreement Explanations
 - EUFRIN-Institutes Agreement





Experimental contract (2)

- Presentation general principles and the Institutes-Agreement during EUFRIN-Board meeting November 2006
- Approval by the whole Working Group (March 2007 at Balandran (F))
- 2007-2009: Minor changes after contacts with breeders/licence holders
- Final approval by the whole Working Group (March 4th 2009 at Skierniewice (Poland))



Release update 1.1



Principles of EUFRIN Testing Agreement (1)

- Evaluation of horticultural merits of varieties
(Observations according approved EUFRIN-descriptor lists)
- No financial compensation for standard testing – receiving material free of charge
- Material and all related rights remain property of the breeder
- Testing results remain property of the Research station
- Transmission of testing results and information
 - confidence about testing agreement and results
 - publishing allowed after 4 to 5 years, respectively when trees are sold or advertised or EU-PVR-application



Principles of EUFRIN Testing Agreement (2)

- Transmission of testing results after written request
- Visiting testing station after previous announcement during business hours
- Information exchange possible within the EUFRIN-network – separate frame contract (Confidentiality agreement)
- Mutants/essentially derived varieties according to UPOV-rules
- Use for further breeding activities after introduction to the market (according to UPOV)
- Rules for duration, termination and continuation of confidence



Explanations to the EUFRIN Testing Agreement:

- It is the intention of the Testing Agreement, that it shall be signed only once between the testing institute and the breeder/owner/licensor. If later more varieties are delivered for testing purposes, the Breeder each time (or every year) sends a new document/list (= a new Attachment 1) to the Recipient.
- The latest list/attachment₁ always encloses all varieties from the breeder's property, which are in test at the Testing Institute. The list shall be changed, if there are new varieties for testing or if there are varieties, that are grubbed. Varieties which are grubbed, must be deleted from the list and new varieties have to be added to the list. The update of the list will be done by the Breeder. The Tester will inform the Breeder about the grubbing of cultivars (within a month after grubbing).

Attachment 1 : Varieties in Testing belonging to testing agreement

The Parties:

.....

hereafter designated The Recipient,

and

.....

hereafter designated The Breeder,

Table : Varieties in Testing

Cultivar	Species	Parentage	Virusstatus	Resistance	Maximum Number of trees	Year*	Location of Testing

* Year = date of sending the Material or the Variety.

latest published
versions
update 1.1 (2009)
see at
<http://www.eufrin.org/>

In witness whereof this Attachment has been executed in duplicate and signed and initialled per page and lawfully represented by,

The Breeder,

X

Name:

Function:

Place:

Date:

Signature:

The Recipient

X

Name:

Function:

Place:

Date:

Signature:

It is the intention of this document, that the Breeder every year sends a new document/list to the Recipient (= a new Attachment 1) with those varieties from his property, that are in test (if there are new varieties for testing or if there are varieties that are grubbed). Varieties that are grubbed must be deleted and new varieties have to be added to the list.



EUFRIN Testing Agreement

- English – German version
- English – French version
- English version is only legal one
- Testing agreement(s) are on www.eufrin.org



Apple & Pear Variety & Rootstock Testing



Laimburg/Italy 2005



Balandran/France 2007



Apple & Pear Variety & Rootstock Testing



Manta/Italy 2011



Vilnius/Lithuania 2015

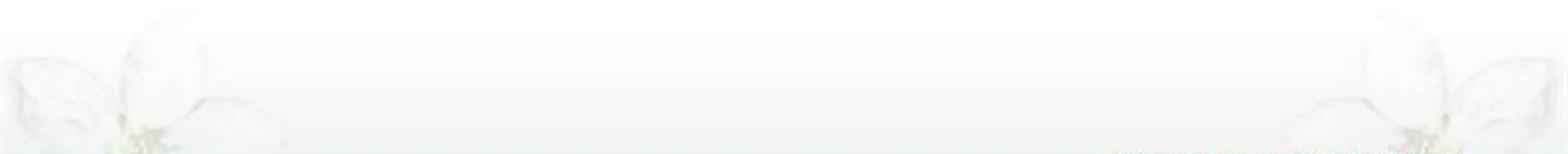


Apple & Pear Variety & Rootstock Testing

1. Haidegg (A)
2. Pcfruit (B)
3. Holovousy (Cz)
4. EULS (EST)
5. CTIFL (F)
6. INRA (F)
7. Klein-Altendorf (D)
8. Sachsen (D)
9. KOB (D)
10. Weinsberg (D)
11. OVA-Jork (D)
12. Agrion (IT)
13. FEM (IT)
14. Laimburg (IT)
15. UNIBO (IT)
16. LSIFG (LV)
17. LRCAF (LT)
18. NIBIO (N)
19. INHORT (PL)
20. Ljubljana (SLO)
21. IRTA (SP)
22. PPO (NL)
23. NIAB-EMR (UK)
24. Agroscope (CH)
25. FIBL (CH)



EUFRUIT





- Horizon 2020 European funded project
- Thematic network
- Aiming and facilitating the access to knowledge
- Disseminating results from existing research
- Consortium of 21 partners from 12 countries
- 01/03/2016 – 28/02/2019
- Coordinator: Michelle Williams (AU – Denmark)
- Budget: 1,8 million euro
- 5 WP's, based on EUFRIN Working Groups



Partners (1)

1. Aarhus University, Department of Food Science – AU (Dk)
2. Pcfruit (B)
3. CTIFL (F)
4. Obstbauversuchsanstalt Jork – OVA (D)
5. Stichting Dienst Landbouwkundig Onderzoek – StDLO (NL)
6. East Malling Research – NIAB-EMR (UK)
7. IRTA (Sp)
8. Agroscope (CH)
9. Laimburg (It)
10. University of Bucharest – USAMV (Ro)
11. National Agricultural Research and Innovation Centre – NARIC (Hu)



Partners (2)

12. Lithuanian Research Centre for Agriculture and Forestry – LRCAF (LT)
13. AREFHL (F)
14. Variety Innovation Consortium South Tyrol – SKST (It)
15. Freshfel (B)
16. Elbe Obst – EO (D)
17. Fruitconsult BV – FC (NL)
18. University of Greenwich – UoG (UK)
19. University of Hohenheim – UHOH (D)
20. UNIBO (It)
21. INRA (F)



EUFRUIT – 5 WP's

- WP₁: Project coordination
 - Leader: AU (Dk)
 - Assistant-leader: AREFLH (F)
- WP₂: Performance of new fruit varieties
 - Leader: pcfruit (B)
 - Assistant-leader: SKST (It)
- WP₃: Reduction in pesticide residues
 - Leader: CTIFL (F)
 - Assistant-leader: Freshfel (B)
- WP₄: Improvement of fruit storage methods
 - Leader: OVA-Jork (D)
 - Assistant-leader: Elbe Obst (D)
- WP₅: Secure sustainable fruit production
 - Leader: StDLO (NI)
 - Assistant-leader: Fruitconsult (NI)



WP2 – Performance of new fruit varieties

- Leader: pcfruit (B) – Jef Vercammen
- Assistant-leader: SKST (It) – Markus Bradlwarter
- Task 2.1: Establish and coordinate the international expert group (IEG) and scan knowledge
Task leader: pcfruit (+ partners WP2)
- Task 2.2: Synthesising, identifying and prioritising existing knowledge
Task leader: pcfruit (+ SKST, IRTA)
- Task 2.3: Sharing and showing of knowledge to end-users
Task leader: SKST (+ partners WP2)



Partners WP2 (1)

1. AU (Dk) – Marianne Bertelsen
2. Pcfruit (B) – Jef Vercammen
3. CTIFL (F) – Gérard Charlot + Sandrine Codarin + Julien Ruesch
4. OVA (D) – Jörg Hilbers
5. StDLO (NL) – ?
6. NIAB-EMR (UK) – Felicidad Fernandez
7. IRTA (Sp) – Ignasi Iglesias
8. Agroscope (CH) – Sarah Perren
9. Laimburg (It) – Walter Guerra
10. USAMV (Ro) – Adrian Constantin Asanica + Florin Stanica
11. NARIC (Hu) – Geza Bujodoso



Partners WP2 (2)

12. LRCAF (LT) – Audrius Sasnauskas
13. AREFHL (F) – Jacques Dasque + Pauline Panegos
14. SKST (It) – Markus Bradlwarter + Julia Strobl
15. Freshfel (B)
- ~~16. Elbe Obst – EO (D)~~
- ~~17. Fruitconsult BV – FC (NL)~~
- ~~18. University of Greenwich – UoG (UK)~~
19. UHOH (D) – Uli Mayr (KOB)
20. UNIBO (It) – Luca Corelli Grappadelli + Stefano Tartarini
21. INRA (F) – Francois Laurens



WP2 – Performance of new fruit varieties

- International Expert Group (IEG)
 - Minimum 16 (+2) participants
 - Open for other experts (e.g. members of the EUFRIN Working Group “Apple & Pear Variety & Rootstock Testing”)
- Form linkages with other EUFRIN Working Groups
- Not only apple and pear, but also other fruit species
 - Berry fruit
 - Plum and prune
 - Apricot and peach
 - Sweet and sour cherry
- IEG-meetings
 - First meeting: Bologna (It) – June 27th and 28th 2016
 - Next meeting: Baladran (F) – March 2017



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22. PPO (NL)
23. EMR (UK)
24. Agroscope (CH)
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WP2 – Performance of new fruit varieties

- IEG: 1 meeting per year (May)
 - 16 (+2) partners of EUFRUIT WP2
 - + members EUFRIN Working Group(s)
- 1 scanning per year
 - Obligated for the partners of EUFRUIT WP2
 - Not mandatory for EUFRIN members
- Dissemination table
 - Articles, open days, meetings, ...
 - 1 table per institute per WP
 - Through leader and co-leader of WP's
- Knowledge platform
 - Articles in native language + 1 A4 in English
 - Website of EUFRIN: www.eufrin.org



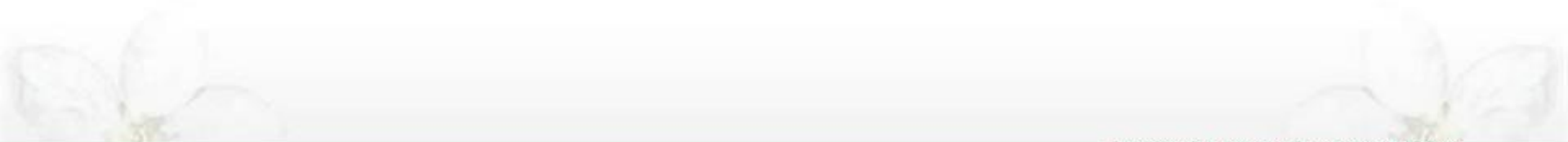
Synthesis (1)

- 12 of the 18 participants of WP2 are member of the EUFRIN Working Group "Apple & Pear Variety & Rootstock Testing"
 - AU, USAMV and NARIC
 - SKST, AREFLH and Freshfel
- Most of the partners are also participating in other networks (eg Fachkommission Kernobst in Arbeitskreis Züchtung, Liste Varietale, ...)
- Agroscope, Laimburg, LRCAF, UNIBO and INRA have an own breeding program for apple and/or pear varieties
- IRTA and UHOH (KOB) work together with a breeding program for apple and/or pear varieties



Synthesis (2)

- Members of the EUFRIN Working Group are mostly using the EUFRIN testing agreement (last version March 4th 2009)
- For the evaluation of the new varieties the EUFRIN Descriptor lists for apples or pears are used
- Demands for a new apple and pear variety:
 - Production, fruit size, appearance
 - BUT ALSO storability and shelf life and distinguished from the existing varieties
 - AND less susceptible to pests and diseases (part of the trees is less or not treated)





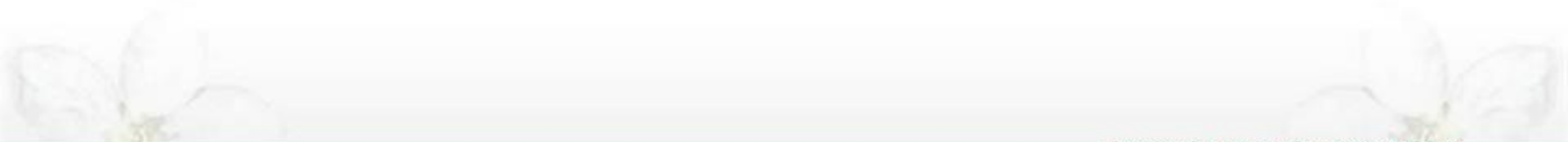
Synthesis (3)

- Mostly 2 levels:
 - Level 1: Limited number of trees (5 to 20 trees), planted in comparison with a standard apple or pear variety
 - Level 2: Best varieties of level 1 are planted in a larger scale, on one or more locations
- The varieties in level 2 can be visited by fruit growers
- Depending on the variety, trials are done on different topics
- The selected apple and pear varieties for level 2 are not the same in the different institutes or climate zones
- The eventual goal is to make a technical guide for the fruit growers



Challenges

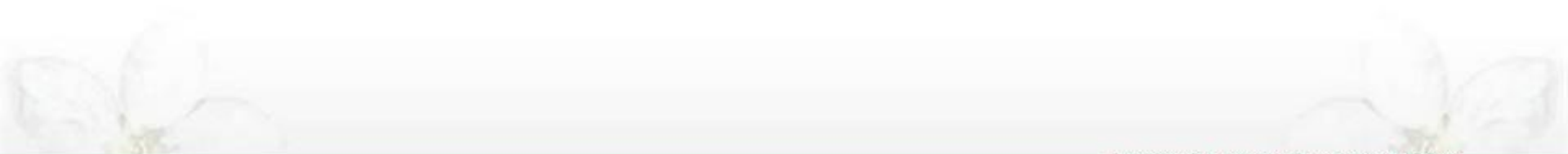
- How to evaluate resilient varieties (in the frame of public testing)?
- How to aggregate knowledge about varieties at European level?
- Marketing strategies are more/as important as agronomic performance?





Variety testing in Belgium

(Research done with financial support of CMO)





Variety testing

Demands for a new apple variety

- Productive, good size, one picking
- Good outlook, good taste
- Different from other varieties
- Optimal for our climate
- Low susceptible to spring night frost
- Good storability and shelf life
- Low susceptible to pests and diseases



Apple : Level 1

- 6 trees in a parcel with fungicides (IPM)
- 4 trees with minimal use of fungicides
- (5 trees in an organic parcel)
- Compared to Golden and Jonagold
- 30 observations (EUFRIN-Descriptor List)
- Annual report to the breeders





Apple : Level 2

40 to 200 trees are planted to test the best varieties at orchard level

- Chemical thinning / Fruit set
- Fertilisation and Fruit quality
- Planting systems and training systems
- Storage (together with VCBT)



Technical report



Variety testing

Apple varieties in level 2

- Kanzi®/Nicoter
- Belgica
- Wellant®/Fresco
- Maribelle/Lola®
- Sweet Surprise®/B3F45
- Joly Red
- Kizuri
- Asfari
- Rockit®/PremAg6
- Ras 95
- Sweetango®
- Natyra®/SQ159
- Isaaq®
- Evelina®/RoHo 3615



Pear : Level 1

- 5 trees in a parcel with fungicides (IPM)
- 5 trees with minimal use of fungicides (since 2014)
- Effect of GA-treatments on fruit set
- Compared to Conference
- Descriptor list based on IBPGR Descriptor List
- Quince Adams with interstem of Beurré Hardy or Doyenné du Comice
- Annual report to the breeders



Pear : Level 2

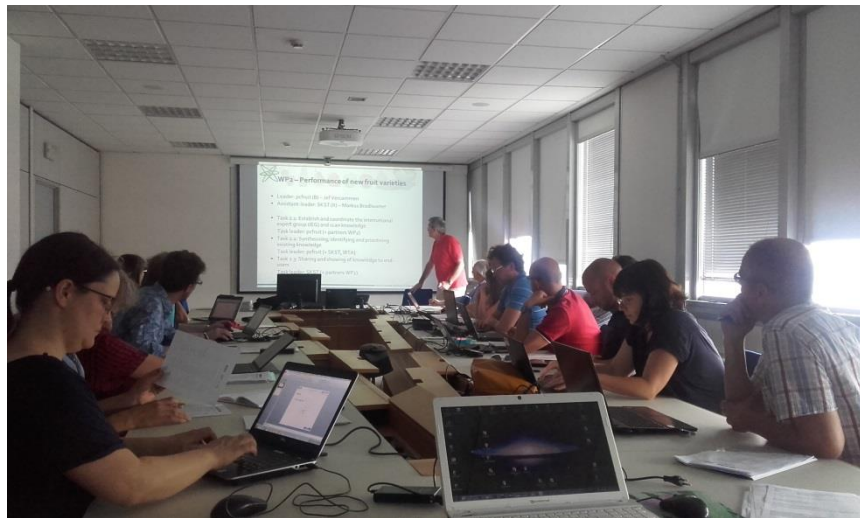
40 to 120 trees are planted to test the best varieties at orchard level

- Picking moment
- Fruit set / chemical thinning
- Fertilisation and fruit quality
- Planting systems and training systems
- Storage (together with VCBT)

 Technical report



Thank you for your attention !



IEG-meeting Bologna 2016

