Apricot and Peach WG
Report 2017


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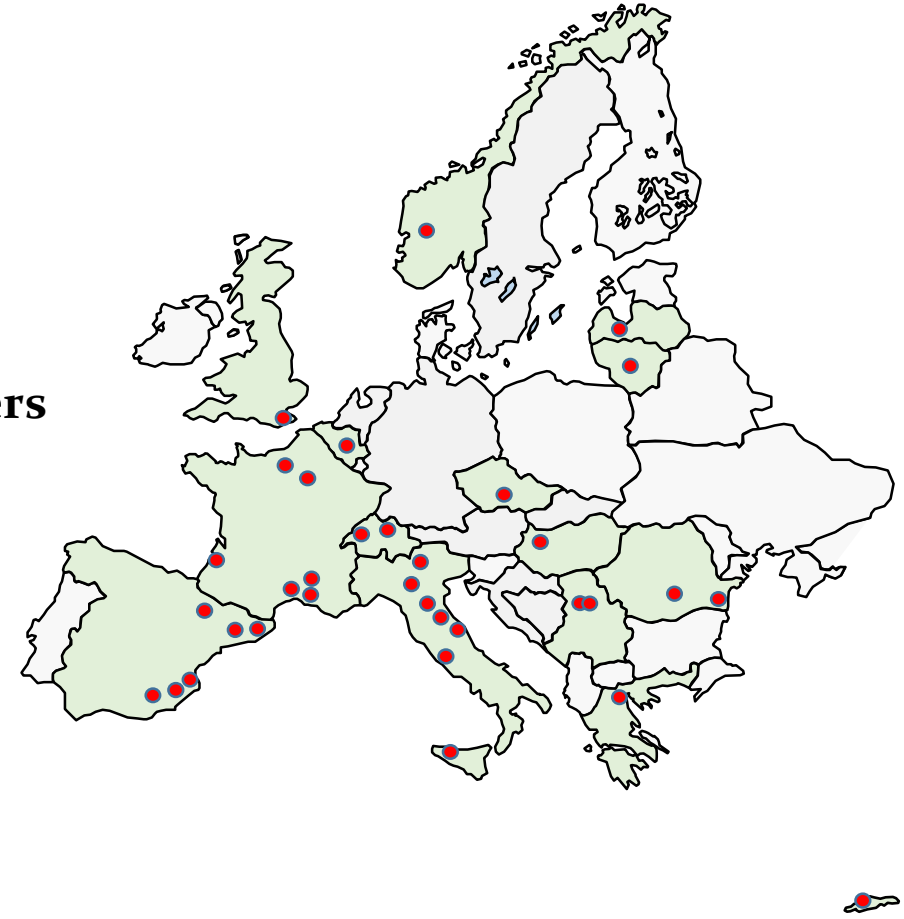
Apricot & Peach WG

To date: **66 members**

- ✓ **breeders & variety testers**

14 countries

33 R&D Institutes



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Establish a collaborative varietal evaluation system in EU

Step 1. Agree on a common evaluation protocol

2016:

A group of peach experts engaged in developing a phenotyping protocol:

- ✓ Select the most effective traits for the assessment of a peach variety performance
- ✓ Agree on a methodology to score/assess each trait
- ✓ Source: UPOV/CPVO+ECPGR descriptor lists +
  testing protocols @ CREA (Italy); Ctifl (France); IRTA (Spain)

Outcomes

In preparation

Preliminary list of

- ✓ **41 traits selected**
  - ✓ **78% regularly assessed/measured in testing trials;**
- ✓ **Protocols ready/in preparation**

	#	Trait	Descriptor
Phenological/vegetative	1	Beginning of leaf bud burst	Date at which the first leaf buds burst
	2	Beginning of flowering	Date at which about 10% of flowers are open (BBCH stage 61).
	3	Full flowering	Date at which 80% of the flowers are open
	4	End of flowering	Date at which most petals are fallen (BBCH69)
	5	Beginning of ripening	Date at which the first fruits are physiologically ripe
	6	Additional picking dates	The other dates needed to complete harvest
	7	Chilling requirement	Number of CH or CU, needed to fulfill dormancy
	8	Tree vigour	Tree size (or TCSA size) as compared size of cvs. of the same age.

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	#	Trait	Descriptor
Productivity	8	Intensity of blooming	Density of flowers on the bearing shoots (scale 1-9)
	9	Fruit set	Density of fruits on the bearing shoots (scale 1-9)
	10	Yield per tree	Total yield (kg) per tree
	11	Fruit weight	Average fruit weight (g) of the crop harvested (from the 3° year of planting)
	12	Fruit size distribution	Distribution of the crop harvested in commercial size classes (from the 3°-4° year of planting)

	#	Trait	Descriptor
Biotic Disorders	13	Brown rot	Degree of sensitiveness to the relevant pests or diseases. Susceptibility level: 1=very low susceptibility; 3= low; 5=medium; 7=high; 9=very high susceptibility
	14	Leaf curl	
	15	Powdery mildew	

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	#	Trait	Descriptor
	16	Fruit split-pit (included non visible)	Occurrence of broken stones: 1=absent (0-5% splits), 2=medium 10-20% splits, 3=high (>20% splits)
Fruit abiotic disorders	17	Skin cracking (mainly in nectarines)	Occurrence of crackings on the skin: 1=no cracking, 2=medium 10-20%; 3=high >20%
	18	Pistilar cavity closing	Closure; 1=complete/almost complete; 2=small cavity, <5 mm Ø; 3=large cavity >5 mm Ø and/or stellar cracking
	19	Skin russetting (in nectarines)	Occurrence of russet in the skin
	20	Skin speckling (in nectarines)	Occurrence of specklings in the skin
	21	Fruit skin discoloration (eg.streaking)	Occurrence of discolored zones in the skin. Eg. streaking, associated to rain event/s.
	22	Corky spot	Occurrence of suberized spots in the flesh: 1=no simptoms; 2=medium simptoms (<20% of flesh affected); 3=serious symptoms (>30% of flesh)
	23	Fruit doubles	Occurrence of double carpelled fruit
	24	Skin wrinkling (especially in nectarines)	Occurrence of wrinkling on the skin after an important rain.

Fruit abiotic disorders

Doubles

Split-pit

Cracking

Stylar cracking

Skin speckling

Discoloration

The protocol will be endowed with explicative drawings and pictures

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	#	Trait	Descriptor
Fruit appearence	25	Fruit shape (lateral view)	Fruit profile in lateral view: 1=round; 2=round-oblate; 3=round-elongate; 4=flat; 5=elongate;
	26	Fruit shape (transversal view)	Fruit profile on the transversal plane: 1=round; 2=round-oblate; 3=oblate; 4=triangular
	27	Fruit blush %	Skin % covered with (red) over-colour
	28	Red over colour pattern	Pattern of the red color distribution on the skin

	#	Trait	Descriptor
Internal Fruit Quality	29	Sugar content	Soluble solids % in the juice expressed by physiologically ripe fruit
	30	Acidity content	Amount of acids (meq per liter) in juice expressed by physiologically ripe fruit
	31	Fruit Taste	Based on the balance sweetness/acidity: 1=very sour; 3=sour; 5=equilibrate; 7=sweet; 9=very sweet
	32	Flesh firmness	Flesh firmness (after skin removal) of physiologically ripe fruits. Expressed in kg (or Newton (N) 1=very soft (<1 kg); 3=soft(>1-3.0 kg <); 5=medium (3-4 kg); 7=firm (4-6 kg); 9=very firm > 6
	33	Flesh texture	1=melting; 2=gummy (like non melting fruits); 3=cruncy (eg. Big_Top like)

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In preparation

	#	Trait	Descriptor
Post-harvest	34	Storability	Length of the period in which fruits can be cold stored and maintain marketable characteristics
	35	Brown rot susceptibility	Percentage of fruits affected by Monilinia spp. rots
	36	Fruit skin inking	Occurrence of black/brown marks on the skin in the post-harvest. Inking seems associated to skin abrasion due to handling and hauling operations

	#	Trait	Descriptor
Derived parameters	37	Lenght of blooming period	Duration of the blooming period
	38	Pack-out	Percentage of the yield which is marketable (eg. no disease/disorders visible, sufficient size, etc.)
	39	Yield efficiency	Amount of Yield (kg) per unit of trunk size (cmq)
	40	Fruit size uniformity	Size uniformity of the fruit harvested 1: very scarce; 3=scarce; 5; medium; 7=uniform; 9=very uniform. Can be Inferred from trait # 12
	41	Ripening (uniformity)	Ripening stage uniformity of fruit harvested. Can be Inferred from traits # 5 and 6

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Establish a collaborative varietal evaluation system in EU

Step 2. Select a list of reference cvs.

The following criteria to select the references were agreed:

- ✓ Good yield and fruit quality performance in the relevant peach growing areas;
- ✓ Representing the most important commercial peach fruit categories
  - ✓Yellow and white-fleshed Peaches & Nectarines;
  - ✓'Sweet' (TA ≤ 6 g of malic acid l^{-1}) vs. 'Standard' taste;
  - ✓Early, Medium, and Late ripening time;
- ✓ Various genetic background

✓ **IX International Peach Symposium**
Bucarest, Romania, July 2-7 2017

PEACH 2017

✓ 18 cvs. selected

Step 2. Select a list of reference cvs.

- ✓ 18 cvs. selected
- ✓ grafted in September 2017
- ✓ 4 trees/cv. per 9 testing sites
- ✓ 2018: planting

Type of fruit	Name	Taste	Harvest period
YELLOW PEACH	Carlacov	Sweet	Early
	Elegant Lady®	Acid	Medium
	Sweet Dream	Sweet	Medium
	O'Henry®	Acid	Late
WHITE PEACH	Patty®	Acid	Early
	Tonicsweet®	Sweet	Medium
	Gladys®	Acid	Late
YELLOW NECTARINE	Ambra	Acid	Early
	Big Top®	Sweet	Medium
	Venus®	Acid	Late
	Nectapom®	Sweet	Late
WHITE NECTARINE	Borealcov	Sweet	Early
	Emeraude®	Sweet	Medium
	Nectasweet®	Sweet	Late
CLINGSTONE	Catherina®	Acid	Medium
FLAT PEACH	Samanthacov	Sweet	Early
	Sweet Cap®	Sweet	Medium
	Regalcake®	Sweet	Late

IX International Peach Symposium, 2-7 July 2017, Bucarest

Evaluation of novel peach cultivars in the European Union: the EUFRIN Apricot and Peach Working Group initiative

D. Giovannini, CREA, Italy
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M. Cutuli, CREA Italy
P. Drogoudi, HAO 'Demeter', Greece
S. Foschi, CRPV, Italy
C. Hilaire, Ctifl, France
I. Iglesias, IRTA, Spain
A. Liverani, CREA, Italy
J. Ruesch, Ctifl, France

Meetings 2017

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- ✓ **IEG-meeting of EUFRUIT**
  WP2 "Performance of new varieties
  Baladran (France), March 1-2 2017)

- ✓ **IX International Peach Symposium**
  Bucarest, Romania, July 2-7 2017

Meetings 2018

- ✓ **III WG meeting: 4-6 June 2018**

  Balandran (Ctifl), France

  Organizers: Julien Ruesch and Christian Hilaire


Thanks for your attention