WeiGi®: Generation of new German Cherry-rootstocks

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General Informations referring Weigi®-rootstocks

- Crossings of GiSelA- and Weiroot-clones

- Licensee for Weigi-clones 1,2,3: Peter Stoppel, Kressbronn; Trademark: WeiGi®; www.weigi.com (also: descriptions, figures, photos)

- Propagation of rootstocks: Vitroplant (Italy), Schrama/NL; Cherry-varieties on Weigi-rootstocks: Nurseries Gräb (D); Fleuren (NL)

- Trials started 2004 with Weigi 1-5 in combination Regina and Skeena at 4 German locations (1=Badenia, 2 and 3: Franconia, 4: Thuringia spindle-treatment and drip-irrigation each)

and La Tapy (South of France): trained as „open Vase“; Micro-sprinclers
**LWG:** 4m x 2,50m; Drip-irrigation; Spindle-treatment; 4th leaf: well branched and uniform trees; early fruit-setting, good qualities

**Weigl 1 and Weigl 2 / Regina,**
4th year: 24-30 kg per tree

**Extrapolation**
22-27 tons / 900 trees

Hubert Siegler: First results of new WeiGi-rootstocks
Regina
4th year

Weigi 1 and 2:
4 – 5 boxes with 6 kg per tree

Photo by Visitor group of Chile
Skeena, 4. year; also well branched and uniform trees; Weigi5 -> 4 -> 3 -> 2 -> Weigi1
Weigi 2 & 4: buldge at grafting point:

- Nevertheless, trees are stable without pales or trellis, no losses of trees; combination rootstock-varieties is well compatible.

- Weigi 1, 3, 5: smooth and flat without buldge at grafting point.
Hubert Siegler: First results of new WeiGi-rootstocks
Regina, Weigi 3

Regina, Weigi 4

3,5 m

3,5 m

Hubert Siegler: First results of new WeiGi-rootstocks
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Skeena Weigi 3

Skeena Weigi 4
Skeena
Regina, year 10 (2013)

Gi.5

WeiGi1

WeiGi 2
Figure 1: Vegetative growth of different Weigi rootstocks at location Veitshöchheim, Franconia, 11th year

-**WeiGi 2**: weakest among 5 WeiGi-clones
-**WeiGi 2**: trunk-cross section like GiSelA 5; volume of tree about 8% stronger
-**WeiGi 1**: volume of tree noticeable (25 %), trunk-cross-section only 6% more than WeiGi 2
-WeiGi 3 and 4 and 5 are rather similar with Regina. WeiGi3 with Skeena on level Weigi1, but weaker than clone 4 and 5. Thats why we favorize WeiGi 3 to W4 and W5
Figure 2: Weigi rootstocks at location Veitshöchheim / Franconia: accumulated yield per tree (total of 2006-2014) and average fruit diameter

Regina: 4 m x 2,5 m = 900 trees per 0,9 ha:
Extrapolation: 9,7 kg/tree x 900 trees: WeiGi 2 additional 8730 kg vs. GiSelA5 with better fruit-weight of WeiGi 2
WeiGi 3-5: significantly less yield
Further results (11 years of trial and further 3 years of observation)

- No losses of trees referring all WeiGi-clones
- No suckers at all WeiGi-rootstocks beside WeiGi4: very few suckers
- Less bare branches than GiSelA5

Climate at Veitshöchheim/Franconia:
Total annual rainfall 420-650 mm (most of it in winter: dry summer)
„poor“ soil: sandy loam, few degree on organic content.
Station at 170 m NN (above sea-level).
Results from other German locations

- **Thuringia** (trial without Weigi1):
  Compared to WeiGi2, GiselA5 showed an overall better impression in combination with ‘Regina‘. Weigi 2/Regina with slightly less yield, for it grows weaker than Gi.5

- **Specific yield per trunk-cross-diameter:**
  Weigi 2 and Gi.5 are similar in combination with Regina.
  With ‘Skeena‘, Weigi2 is a bit better
  Weigi 3, 4 and 5 are worse

- Recommentation Thuringia:
  „Weigi‘s are interesting, above all Weigi2“. They will be tested furtheron in new trials.
Specific Yield and average fruitsize Skeena 2008-2014

Skeena: Weigi 2 vs Gi.5 fruitsize – 0.4 mm, but + 30 kg/tree in 7 years
Specific yield and average fruit size Regina 2007-2014

Regina: Weigi 2 vs. Gi5: – 0.7 mm, but slightly higher yield
Conclusions Badenia (Mr. Hubert Schneider):

• „With GiSelA 3, Gi 5, Gi 6 and Piku1 and additionally Weigi 2 in future, we have good options for intense cherry-orchards“.

• „Weigi 2 will replace PiKU in our region“

• „for special orchards, e.g. shaking cherries for processing: rootstocks recommended so far are Alkavo, Piku1. In future, Weigi will be imaginable“
Orchard La Tapy, South of France / Rhone Valley

- Treatment „open Vase“ with 5-6 branches
- Plant-distance 7m x 2.50 m = 515 trees/0.9 ha; irrigation Mikrosprinclers
- „Good“ soil, but pH is 7.7
- Oral communication Mrs. Pinczon:
  - GiSelA5 is too weak and that’s why not recommended there.
  - Gi. 5 shows problems with heat (leaf-yellowing; premature leaf fall) and vitality.

  Aim is to have stronger growing rootstocks than Gi.5 which are compatible to heat and high pH, too.

- Suckers at trial La Tapy:
  Gi.5: partly very much. Weigi 2: some; but distinctly less than Gi.5.
  Weigi 1: scarcely; only occasionally.
  Weigi 3,4,5: numerous
Gi.5 : very weak; Weigi 2 : weakest among Weigi-clones
Weigi 1 seems to be suitable under these conditions

=> Despite other climate and different tree training:
capability of Weigi-clones referring growth is similar to German experiences
Gi.5: weakest growth => weakest yield
In comparison to Gi.5:
Weigi2 bears +45% (Skeena) resp. +70% (Regina);
Weigi1 and 4 approximately double
Weigi 3 and 5 about 2,5- until 3 times more
Referring fruit load (fruitset-density), Gi.5 is best with Skeena due to weakest growth.
Third with Regina (First: WeiGi 2, second: WeiGi1)
Station La Tapy: total yield 2007-2012 in kg per tree

- Smallest fruits with Gi.5 (both varieties)
- Despite much higher yield, WeiGi1 and WeiGi3 are best

Station La Tapy: average Fruit-weight in g (average of 2008-2012)

- Weigi 2 best with Skeena; smaller with Regina
Conclusions Station La Tapy:

- under these conditions, Weigi 1 and Weigi 2 behave better than Gi.5
- Stronger growing rootstocks like Weigi 3, 4 and 5, but also Weigi 1 and 2 are well adapted to „disadvantageous“ locations (high pH; extreme heat, aridity) and maybe to soil fatigue in replanting orchards
- Weigi-clones can become more important in relation to climate-change....
- ...and to new training-systems (e.g. UFO, Angular planting ...)
Experience, statements and observations from Vignola (informations from P.Stoppel by V.Monari)

- very good experience with WeiGi 2 and 1 in a demonstration-trial under the conditions of replanting and heavy soil
Experience, statements and observations from Vignola

(information from P. Stoppel by V.Monari; pictures: V.Monari)
Observations so far by Peter Stoppel and Mr. Monari:

- Weigi 2 grows stronger than Weigi1 (because of replacement and heavy soil) and GiSelA5, but less than Colt and MaxMa60.
- Weigi 2 is well adapted to these conditions and heat.
- Another example that Weigi 2 is better adapted to heat than GiSelA 5.
- Weigi 2 yields more than Colt, MaxMa60.
Experience by Peter Stoppel's visit in Chile, January 2019:

WeiGi-rootstocks, above all Weigi2:

- good first impressions from nurseries and young orchards / trial fields in Chile: good and horizontal branching
- Weaker growth at top of the trees than e.g. Colt
- Weigis present better than GiSelA-clones, even stronger rootstock GiSelA12
Overall evaluation of WeiGi’s.

- like GiSelA5, WeiGi 2 for intense orchards with irrigation

- under German /Middle-European conditions:
  WeiGi2 relatively similar to GiSelA5 referring yield, growth, but also with further advantages (vitality, less balding / less bare branches). Suitable for poor soils, hot climate, dry regions and referring climate-changing

- WeiGi 1 and 2 suitable for very fertile varieties and weak or compact growing varieties like Samba, Skeena,

- According first impressions, WeiGi2 also suitable for replanting

- => WeiGi 2 is an universal rootstock

- According licensee Peter Stoppel, demand on WeiGi 2 is increasing, world-wide

- locations which need stronger growing rootstocks.
Under hot, resp. Mediterranean climate, Weigis are well adapted

WeiGis 1, 2 and 3 may be used for new training-systems like UFO, Anchor-planting (first trials are promising!)

WeiGis are compatible with all varieties tested so far. They achieve safe combinations.

In Germany, WeiGis are currently tested in comparison to GiSelA-clones Gi.5, Gi.6, Gi.12, Gi.13, Gi.17 in different trials and regions
=> Weigi‘s, the „must-have rootstocks“: try them!!!!

www.weigi.com

Thank you for your attention!