

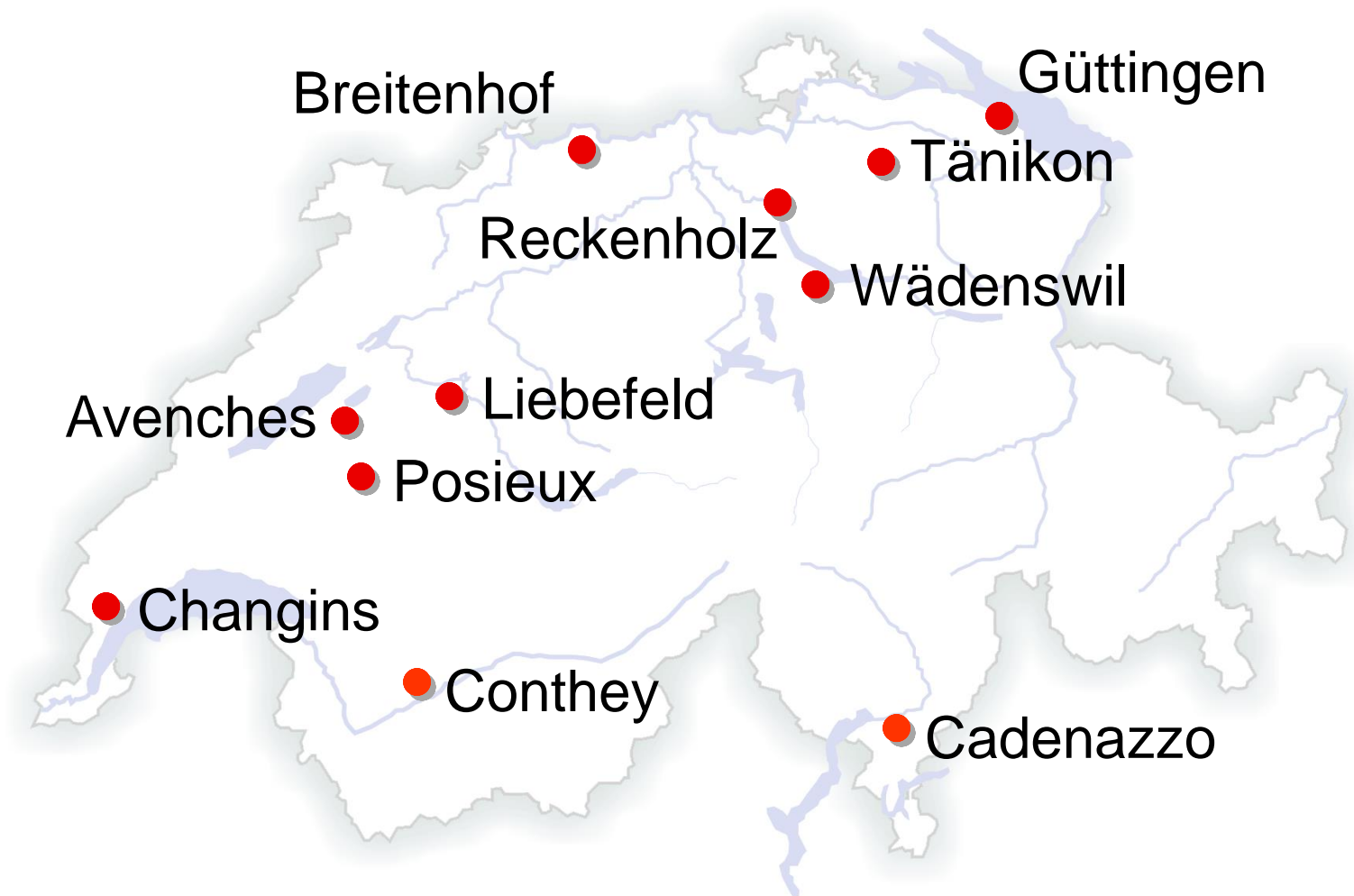


# Scanning WP2 Agroscope New fruit cultivars: Stone fruits

**Simon Schweizer**

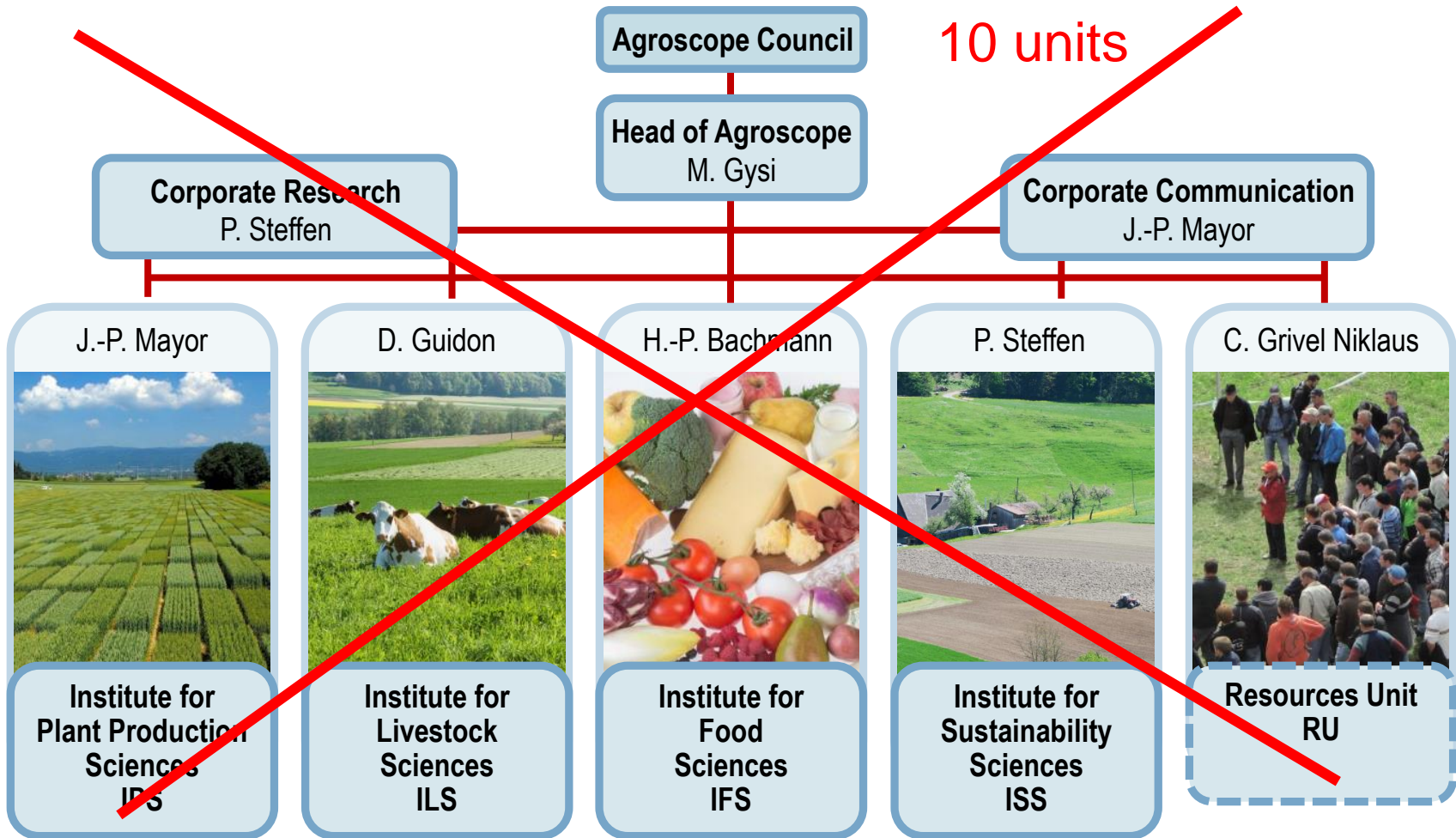
Eurfuit WP2 Meeting in Balandran, 1. 3. 2017

# Agroscope's Sites



# Agroscope: fusion of all Swiss agricultural research stations

Starting in 2017:  
new structure with  
10 units





# Variety testing at Agroscope, Switzerland



## Sarah Perren

- Plant protection
- Fire blight
- Variety testing pome fruit
- Low-residue production strategies
- Eufruit Expert WP2

## Simon Schweizer

- Physiology and crop management cherry/plum
- Variety testing cherry/plum
- Eufruit coordinator Agroscope

## Danilo Christen

- Group leader fruit research Conthey
- Selection of apricot and pear
- Variety testing apricot and apple
- Physiology and crop management apricot

# Swiss stone fruit variety testing under pressure...

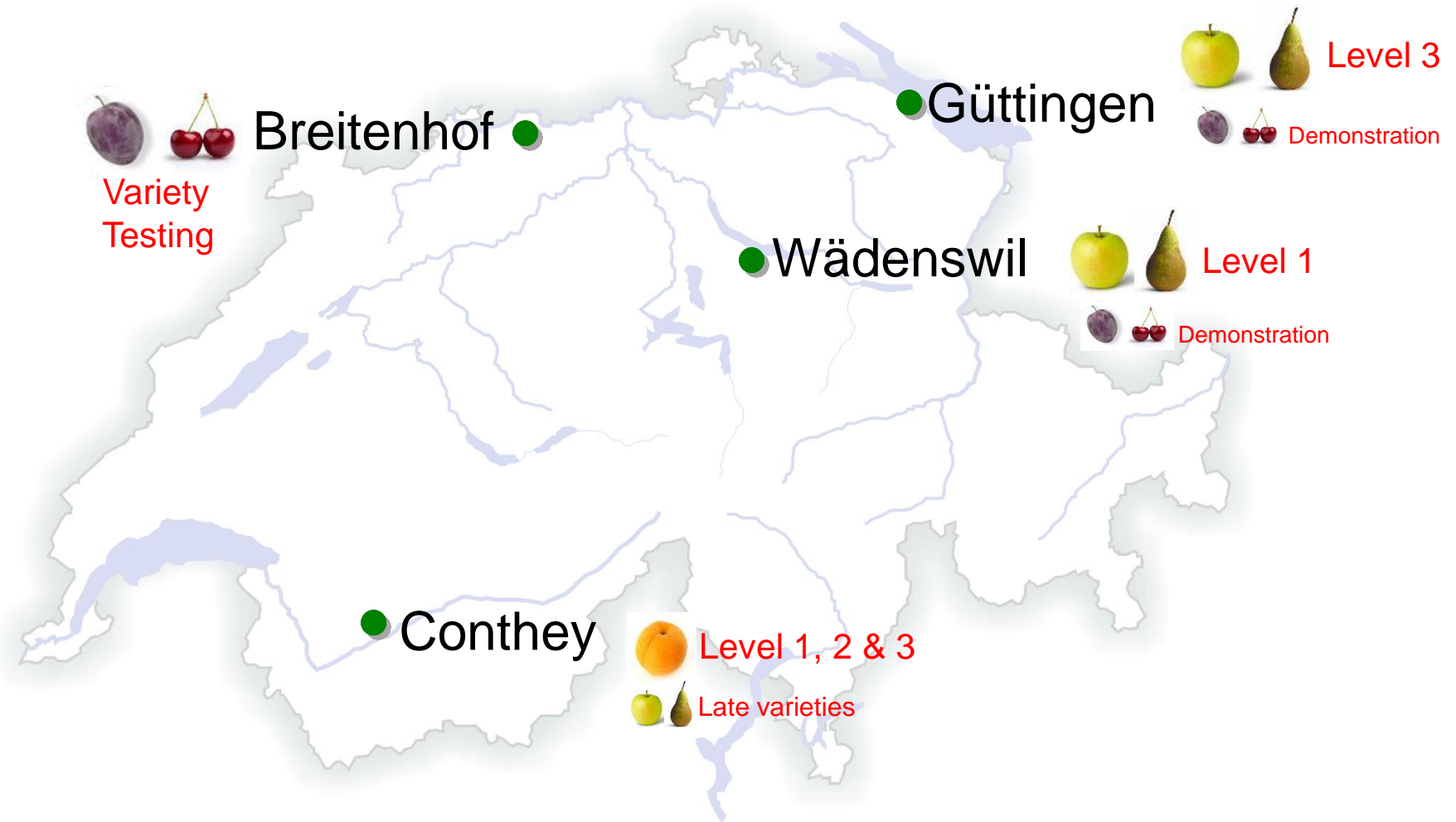
until 2015: Isabel Mühlenz, 80% workload



as of 2017: Simon Schweizer, **25%**



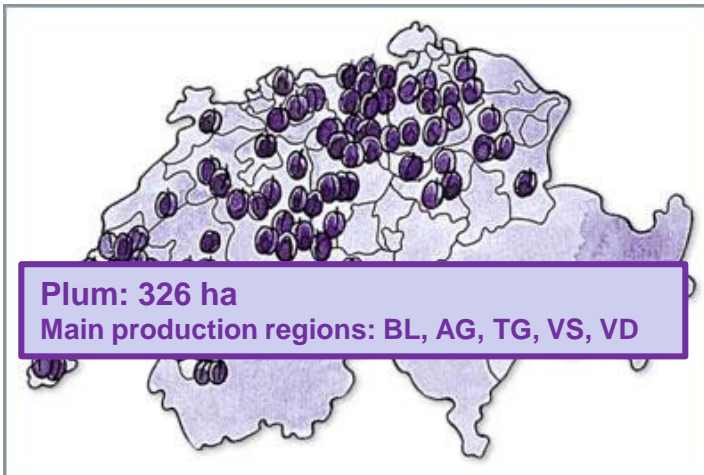
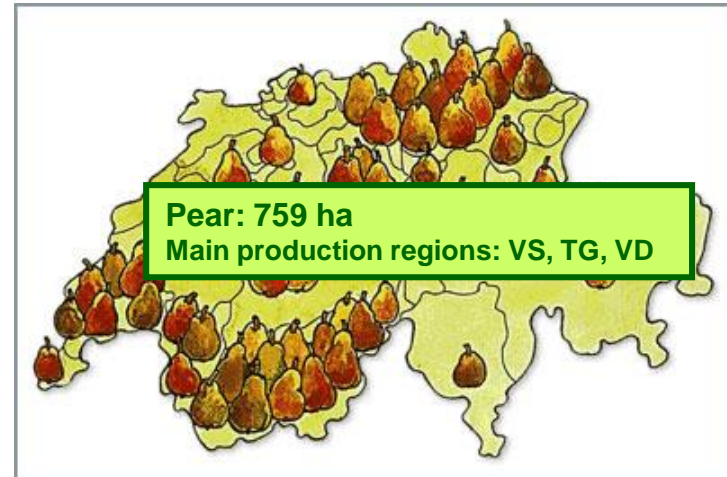
# Fruit trial sites







# Swiss fruit sector



**Aprikosen: 721 ha**  
**Main production regions: VS**

Graphics: Schweizer Obstverband  
Data: BFS 2016



# Overview of Swiss variety range



Reihe	Sorte	Blühende (8)	Tage Blühbeginn (1)	Tage Beginn Vollreife (4)	Tage Blühende (8)
14	Debora	24.4.15	104	105	114
14	Justyna	23.4.15	104	108	113
14	Mandy	23.4.15	104	106	113
14	Rita	21.4.15	103	105	111
14	V 2761	24.4.15	104	106	114
14	SF 97084	20.4.15	102	105	110
15	Grace Star (G6)	24.4.15	104	108	114
15	Masdel (G6)	22.4.15	103	105	112
15	Primulaf-Ferprime	22.4.15	103	105	112
15	Fermier	23.4.15	103	105	113
15	Arcina Ferzer	23.4.15	102	105	113
15	SF 02021 (PC 8011 3)	24.4.15	105	108	114
15	SF 91131	22.4.15	104	107	112
16	Blaze Star	23.4.15	103	106	113
16	F19.3.21	23.4.15	105	108	113
16	Sweet Early	22.4.15	103	105	112
16	Paulus	23.4.15	104	106	113
16	K8c.232	24.4.15	104	107	114
16	K8c.194	23.4.15	104	108	113
17	Aida (G 6)	22.4.15	103	105	112
17	Aida (Maxma 14)	22.4.15	103	108	112
17	Valery Cs. (G 6)	22.4.15	103	105	112
17	Valery Cs. (Maxma 14)	22.4.15	103	105	112
17	Firmred (G 6)	22.4.15	104	108	112
17	Firmred (Maxma 14)	22.4.15	104	106	112
17	K21.376	22.4.15	103	105	112
17	K8c.194	22.4.15	103	108	112
18	92/31-22	26.4.15	108	112	116
18	Big Star	25.4.15	105	108	115
18	Early Burlat	23.4.15	104	107	113
18	Penny	26.4.15	108	112	116





# Current Swiss cherry selection

Cherry week	Standard	Novelties
Cherry week 1 / 2	<b>Burlat</b> Valerij Cs. Narana	
Cherry week 3 / 4	<b>Merchant</b> Giorgia Bellise	
Cherry week 4 / 5	Grace Star Vanda <b>Christiana</b>	Folfer Early Korvic, Korvic Benton Tamara Justyna
Cherry week 5 / 6	Oktavia <b>Kordia</b>	Summer Sun
Cherry week 7 / 8	<b>Regina</b> Sweetheart	Penny ? Irena



# Cherry rootstocks

Rootstock	Vegetative growth (copared with F 12/1)	Yield	Soil requirements	Vulnerabilities	Comments
Maxma 14	65-75%	medium-high	für flachgründige Juraböden	Bodennässe	geeignete Unterlage für flachgründige Juraböden
GiSeIA 6	55-70%	high	anspruchlos - für viele Standorte geeignet	im Alter Verkahlung möglich	vielseitig nutzbar - Nachbau, starktragende Sorten
GiSeIA 5	45-55%	high	für wüchsige, fruchtbare Böden	im Alter Verkahlung möglich	Standardunterlage, nicht mit starktragenden Sorten
GiSeIA 3	30-40%	medium-high	für sehr wüchsige, fruchtbare Böden	im Alter Verkahlung möglich	wenig Anbauerfahrung, nicht mit starktragenden Sorten
<b>Weigi 1</b>	slightly more than G5	Ertrag etwas schwächer als G5 durch grösseres Baumvolumen. Grösse analog G5.		Kompakter Wuchs Keine Wulstbildung an Veredelungsstelle	
Weigi 2	≈ G5	Ertrag vgl. G5 und höher. Grösse analog G5.		Kompakter Wuchs Wulstbildung an Veredelungsstelle; ohne negative Auswirkungen.	
<b>Weigi 3</b>	≈ M14	Ertrag deutlich schwächer als Weigi 1 & 2, dafür günstigere Fruchtgrössen.		Kompakter Wuchs keine Wulstbildung an Veredelungsstelle	

Resilient to draught and heat?  
Test planting 2015



# Current Swiss plum selection

Sorte	Bewertung	Sorte	Bewertung
Topfirst	-	C. Fruchtbare	+
Hanka	+	Toptaste	+/-
<i>Tegera*</i>	+	<i>Fellenberg*</i>	+
C. Schöne	+	<i>Jojo**</i>	+
Hanita	(+)	Haroma	-
Topstar Plus	-	Habella	-
Topfive	-	Tophit Plus	+
Dabrovice	+	Haganta	-
Bellamira	+/-	Elena	(+)
Miragrande	+/-	Topend Plus	-
Topking	+/-		

\* *Sharka - sensitive* \*\* *Sharka - hypersensitiv*

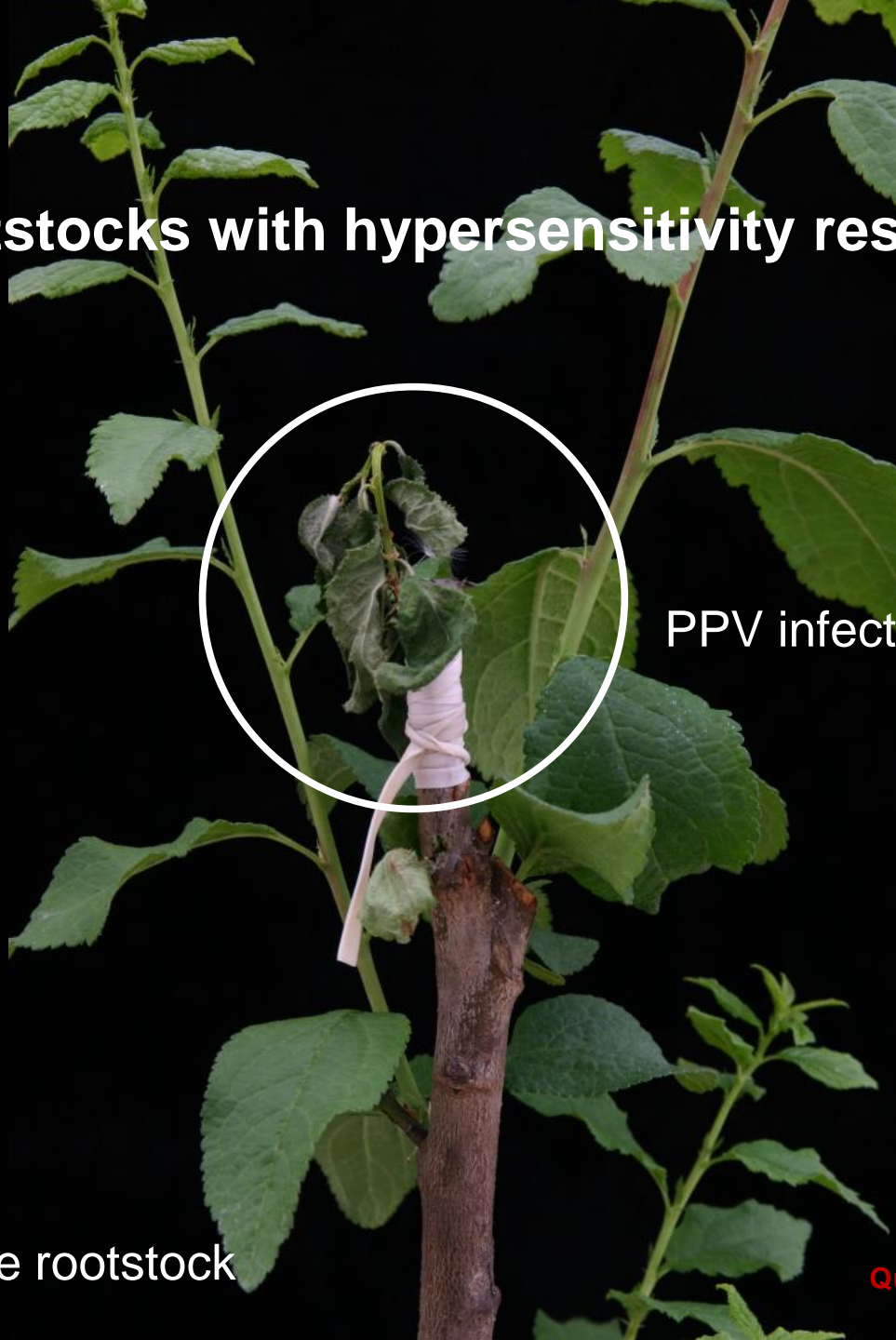


# Plum rootsocks

Rootstocks	Properties
Standard: <b>St. Julien GF 655/2</b>	mittelstarker Wuchs, sehr hohe Erträge, anspruchslos, viele Stockausschläge, prone to <b>Pseudomonas</b>
Standard: <b>Jaspi Fereley</b>	mittelstarker Wuchs, sehr hohe Erträge, anspruchslos, viele Stockausschläge, prone to <b>Pseudomonas</b>
Selection from <b>Wangenheimer Frühzwetsche</b> (Seedling):	Allg.: mittelstarker Wuchs, hohe Erträge, anspruchslos, kaum Stockausschläge, resilient to Pseudomonas
<b>Wa x wa</b> (Wangenheimer x Wangenheimer)	einheitlicher, homogener als Sämlinge unterschiedlicher Herkunft
<b>Wavit</b> (Wangenheimer in vitro vermehrt)	geschützt, einheitliches Pflanzenmaterial, zertifiziert, virusfrei
<b>Weiwa</b> (Wangenheimer in vitro vermehrt)	nicht geschützt, Eigenschaften vgl. Wavit, zertifiziert, virusfrei

**Sharka:**

**Use of rootstocks with hypersensitivity resistance**



PPV infected scion

hypersensitive rootstock

Quelle: Dr. M. Neumüller, (Bay|O|Z)





# Trial with sharka hypersensitive rootstocks

## First leaves 2011

**Varieties:** C. Schöne, Jojo, Fellenberg, Hanka, Haroma

**Rootstocks:** **Docera 9, Docera 6, Docera 5, Dospina 235**

**Standard:** **Wavit** und **Jaspi-Fereley**

**Planting:** 4.5 m x 2.5 m

**Design:** min. 4 trees per rootstock and variety



# Targets for new cultivars

- Variety diversification – **greater choice**
  - Harvest period
  - Features demanded: size...
  - Specialities?
- Improved efficiency – **replacement of current varieties**
  - Fruit quality / cracking
  - Health / resistance / resilience
  - Effort (tree care, harvest...)
- Future demands
  - Climate / draught
  - Residue-free production
  - .....



# Enquiries and observations

## Fruit quality



- Size and weight
- Firmness
- Sugar content
- Attraktivität
- Separating from the stone
- Flesh colour
- Aroma, juiciness, tasting

## Suitability for growing



- Blossom time and fertilization
- Maturing time
- Resistance
- Sharka-hypersensitivity
- Tree habitus
- Leave / tree health

## Economy



- Yield start
- Yield potential
- Yield stability
- Effort

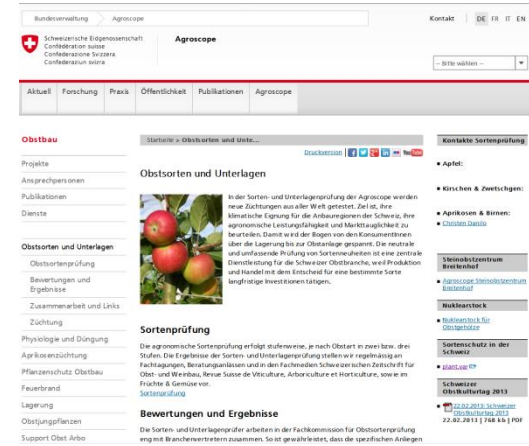


# Knowledge transfer

## Publications



## Websites (e.g. www.obstsornten.ch)



## Farmer meetings and Workshops





# Trends and general discussion

- Neutral? What is the part of an official variety testing?
- Time. Novelties are planted without proper testing.
  
- Competition – collaboration – risk assessment  
Producers – traders – retailers – tree nursery
  
- Information / use of the variety testing?
- Collaboration and coordination with the fruit sector in Switzerland
  
- International collaboration?





# Thank you for your attention



**Agroscope** good food, healthy environment