

REPORT: XIII International Pear
Symposium, Montevideo, Uruguay

Dec
2018



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Hortgro Science
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1. Objectives of the visit:

The objectives of the visit were the following:

- To stay abreast of the newest research on pear.
- To maintain and expand networks with pear researchers.

2. South Africans attending the symposium:

Wiehann Steyn	Hortgro
Karen Theron	SU Horticultural Science
Anton Müller	KROMCO
Pierre du Plooy	Fruitmax Agri

3. XIII. International Pear Symposium

Date	3 - 7 December 2018 in Montevideo, Uruguay
Organiser	Dr Roberto Zoppolo and Danilo Cabrera, National Institute of Agricultural Research of Uruguay (INIA Las Brujas), Canelones, Uruguay http://www.inia.uy/en#
Delegates & RSA participants	• >120 delegates from 23 countries • Karen Theron (SU), Anton Müller (Kromco), Pierre du Plooy (Fruitmax Agri) & Wiehann Steyn
Programme	• 3 Dec. – Pre-symposium tour: Metropolitan fruit area • 4, 5 & 7 Dec – Lectures (45 oral and 68 poster) • 6 Dec – Symposium tour • 8 Dec – Post-symposium tour: West
Noteworthy and interesting presentations	• Some new blushed pears in the pipeline from the INRA, CREA, Czech and Plant & Food programmes. • A new interspecific pear 'ANP-0534' from the Victorian breeding programme at Tatura attains reddest colour at harvest. • The Washington researchers are also now (like we've been doing for a while) focusing on the differences in eating quality, ripening patterns and storability of pears from different canopy positions. Quite a few talks on this. Aim is to identify fruit quality differentials at harvest that might influence postharvest outcomes. • Todd Einhorn presented data on his Amelanchier rootstocks. These rootstocks are more dwarfing than Quince A or C. Also more precocious and resistant to some pear diseases.
Noteworthy and interesting observations during symposium tours	• Farming units are small to large in size (17-180 ha) and a variety of fruits are produced (apple, pear, peach & nectarine, plums, table grapes, kiwifruit, quince and citrus). We also saw some wine grape and olive production and visited a small holding dedicated to production of indigenous fruits, viz. Guayabo, Arazá, Guabiyú and Feijoa. However, the main farming activity in Uruguay by far is beef production. • Fruit production region of southern Uruguay experiences a variable climate. Of late, the variation is becoming more extreme with Richardson CU accumulation 150-1200 between subsequent seasons. • Pest breaking chemicals were not previously applied but now seem necessary. • Rainfall is high (>1200 mm) and the soils relatively heavy (40% clay and 7% organic matter). • Fruit production is mostly for local consumption with some export to Brazil and the EU. • Postharvest practices are not very advanced, but newer orchards are planted at high density and trained to fruiting walls or slender spindle. Newer cultivars are being planted (Cripps Pink, Rosy Glow, Royal Gala). We saw a three-leader planting. • Pear production is declining and we saw few relatively new orchards. Older orchards that we saw were planted at low density (500 – 833 trees per ha) on <i>P. betulaefolia</i>, quince and <i>P. calleryana</i> and trained to vase. Newer pear orchards (2000-2012) were planted on quince Adams/BH and

	BA29/BH at higher density (2222-2500 trees / ha) and trained as central leader trees. Newer plantings were of Bon Chrétien and Red Bartlett. • M9 is the preferred apple rootstock. We also saw orchards on G41 and M7. Some Geneva rootstocks are being trialled. • Yields of both apple and pear are relatively low, seemingly due to inclement weather during set. • Visited a nursery that is converting to production in pots under netting. Believe that they'll be able to produce more uniform trees under the more controlled environment. Also, producing in pots will save on labour (weeding, etc.). Currently producing M9 T337, G202 and OHXF40. Todd Einhorn mentioned that he has started a project comparing pot-grown versus open field apple nursery trees. • Mechanical pruning is being trialled in order to save on labour.
General comments	• I get the feeling that pear research is in decline globally. This seems to correlate with a fruit kind that is stagnant in terms of consumption, lacks innovation and is in serious need of revival. • South Africa remains one of the major players with a comparatively strong research offering on pear.



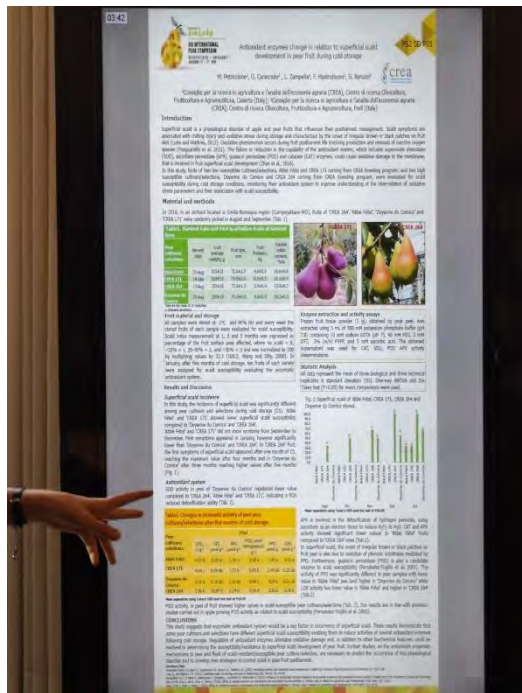
Apple rootstock trial incl. G41, G16, M9 T337, Pajam 2, M793 and M9 EMLA.



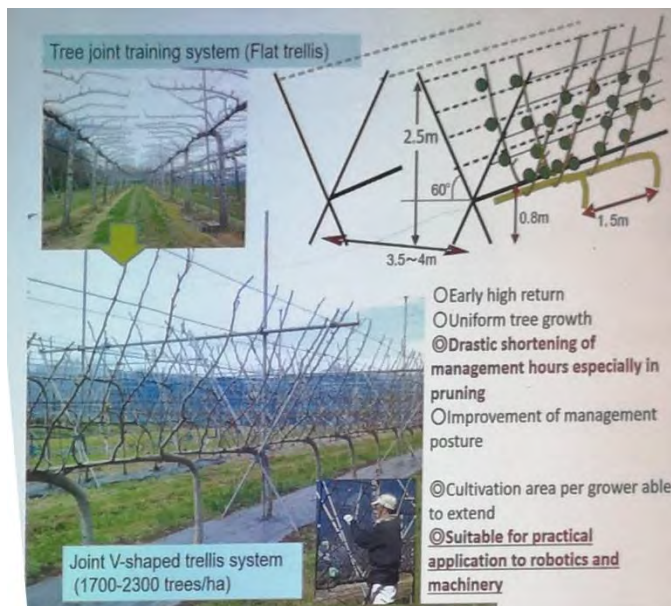
Propagation trials – Geneva rootstocks.



BP rootstock trees in the INIA germplasm collection.



Red and blush pear breeding programme of CREA, Italy.



Picture of slide from the presentation of Tatsuya Seki on the Joint V-shaped trellis training system.



Preparation for planting of potted nursery trees.



Participants of the XIII International pear symposium, Montevideo, Uruguay.



Post-symposium tour attendees.



Gala dinner entertainment...

4. Take home lessons and recommendations

Lessons learnt / Comments	Recommendations and actions
1. <u>Climate</u> Climate change is certainly making its effects felt in Uruguay with Richardson chill units of late varying from 1200 to 150 between seasons. The biggest lesson is that we too need to prepare for a climate that is not only warming and drying, but which is likely to become also more variable. Disastrous seasons from a climate point of view should be expected and planned for in future.	Quite a lot of research and adaptation already taking place. There is a need to distil the SmartAgri Plan of WCDA down to deciduous fruit level for climate and water. Consider contracting Dr Stephanie Midgley for this.
2. <u>Research.</u> From discussions, it is evident that pot growing nursery trees is becoming more prevalent.	Keep an eye on nursery tree research and feed forward to

• The Victoria pear selection that apparently picks up red colour towards harvest sounds interesting.	relevant groupings. • Suggest that Prof Karen Theron attend the 1st Plant propagation and nursery tree symposium to be held in Italy in 2020. Suggest to SAPO that Frederik Voight also attend. • Suggest that Hortgro follows up on the Victoria pear breeding programme – Stephen Rabe has visited the programme in 2019.
3. <u>ISHS international pear symposium</u> • Prof Karen Theron and Wiehann Steyn won a bid for Stellenbosch, South Africa to host the XIV pear symposium in Jan 2023. Dr Elke Crouch will co-host the symposium together with Prof Theron under the auspices of Stellenbosch University and Hortgro. Thea van Zyl will assist with organising the event. The symposium will provide an ideal opportunity for our researchers to develop international networks and will be particularly beneficial to Dr Crouch in terms of exposure and stature.	

Appendix 1

Contacts:

Dr Roberto Zoppolo, Head of the fruit research programme at INIA Las Brujas in Uruguay,
https://www.researchgate.net/profile/Roberto_Zoppolo

Danilo Cabrera, Plant physiologist and Horticulturist at INIA Las Brujas in Uruguay,

Prof Yuanwen Teng, Pear geneticist involved in breeding and also study red colour development in Asian pears, Zhejiang University, China,
https://www.researchgate.net/profile/Yuanwen_Teng

Prof Todd Einhorn, general horticulturist, Michigan State University,
https://www.canr.msu.edu/people/dr_todd_einhorn

Dr Luis Asin, general horticulturist, IRTA, Spain, https://www.researchgate.net/profile/Luis_Asin

Prof Stefano Musacchi, general horticulturist, Endowed chair – Tree fruit physiology and management, Washington State University,
https://www.researchgate.net/profile/Stefano_Musacchi

Prof Terence Robinson, applied crop physiologist and training system expert, Cornell University,
<https://hort.cals.cornell.edu/people/terence-robinson/>

Dr Jeff Vercammen, general horticulturist, Director of PC Fruit, Belgium,
<https://be.linkedin.com/in/jef-vercammen-577a247b>

Prof David Granatstein, organics and sustainable agriculture, Washington State University,
https://www.researchgate.net/profile/David_Granatstein

Prof Francois Laurens, apple breeder and chairman of the next ISHS congress, INRA, France,
https://www.researchgate.net/profile/Francois_Laurens

Lester Brewer, pear breeder, Plant and Food Research, New Zealand,
https://www.researchgate.net/profile/Lester_Brewer3

Dr Richard Volz, head of breeding programme, Plant and Food Research, New Zealand,
https://www.researchgate.net/scientific-contributions/11226147_Richard_K_Volz

Prof Luca Corelli Grappadelli, ecophysiologist, University of Bologna, Italy,
<https://www.unibo.it/sitoweb/luca.corelli/en>

Prof Sara Serra, general horticulture and fruit quality, Washington State University,
<https://horticulture.wsu.edu/people/sara-serra/>

Appendix 2

The final tour itinerary was as follows:

- 3 Dec. –
- 4, 5 & 7 Dec – Lectures (45 oral and 68 poster)
- 6 Dec – Symposium tour

8 Dec – Post-symposium tour: West

Friday 30 November to Saturday 1 December:

Travel from Cape Town to Montevideo via Sao Paulo and Luanda

Sunday 2 December:

Pre-symposium tour with keynote presenters to Eastern region.

Monday 3 December:

Pre-symposium tour: Metropolitan fruit area

Tuesday 4 and Wednesday 5 December:

Scientific lectures

Thursday 6 December:

Mid-symposium tour to fruit growing regions

Friday 7 December:

Scientific lectures and AGM

Saturday 8 December:

Post-symposium tour to Western fruit growing region.

Sunday 9 December:

Travel to Sao Paulo, Brazil

Monday 10 December

Travel to Cape Town via Luanda