AVOCADO PROPAGATION IN PERU AND MALUMA STATUS

Dr. Odilo Duarte – Peru

Horticulturist and Maluma Representant

March 2016

PERUVIAN AVOCADO EXPORT INDUSTRY

- **The avocado export industry started about 20 years ago**
- **Peru had been a producer of Fuerte and Nabal for the local market and practically nobody planted Hass**
- **In the 90s a company started with 500 hectares of Hass (Camposol)**
- **Now there is an estimated of 15,000 hectares**


TOYOTA

Propagation

- **At present nobody, except backyard growers, buys plants from a nursery**

  (an avocado nursery would go broke)

- **All the large farms do their own plants, using seeds for the rootstock. No clonal rootstocks used**

- **The price of a grafted plant is about 3.5-4 U.S. $. (The cost for them is less)**

Propagation

Rootstocks used:

-The main rootstock used is Lula from seed (It is the main pollenizer variety)

-In alcaline-saline soils seeds of West Indian varieties are used (Degania, Ashdot, Ziffrin, etc.), normally using seeds that are imported from Israel at fairly high prices.

-In some cases seeds of the what they call Topa Topa (a Mexican avocado that is grown in the Andes region are used (it is not a true Topa Topa, since it has reddish new growth, characteristic of the Guatemalan race)

Grafting procedures

There are 2 basic procedures used

1. **The conventional method**

- **Put the seed directly in the bag, using large plastic bags. Sometimes only the sandy soil is used as a substrate.**
- **Graft the seedlings when they reach the proper size (splice or cleft grafts are normally used).**
- **Let the graft grow up to 40-50 cm and then transplant to the field**

Grafting procedures

1. **The local modification**

   Leave the rootstock grow to size in bags, transplant it to the field at the final planting distance and graft the plants there, using normally side grafts

   This is probably the preferred method and people is convinced that it results in a better plant growth than using the conventional method

Maluma in Peru

- Maluma was first introduced to Peru in 2010
- At present there are 8 sites along the North and Central coast of Peru

- Most of the trials have been made using from 1000 up to 6000 plants (fairly large for being trials….)

Maluma in Perú

- In the warm North coast where Hass has too small calipers for export Maluma has an average size of 2 caliper numbers higher
- This year where there was a heavy post set fruit drop due to El Niño warm weather, Maluma had much less drop
- In general it has a larger size than Hass and yields are heavier (this asides from having a much smaller seed and no need of PBZ).

Maluma yields

- Maluma budsticks had problems during transport from S.A., resulting in low grafting success.
- This meant re grafting with local budsticks had to be done, resulting in plants of different ages in the field.
- With locally obtained budsticks there is not such a problem. This results in initial yield figures that are not that accurate and could be higher if plants had been more uniform.

Maluma budwood after long trip from SA.

Maluma yields in Peru

- Yields of Maluma are very satisfactory
- Average yields have been

Location	Years after grafting	Yield T/ha
1*	2.5	1.5
1*	3.5	7
2	3.0	6
3	2.5	8
4	2.0	3
4	3.0	8-9

* **Very high carbonate and high salt content in soil.**

Maluma in Peru

- A commercial planting of 60,000 plants has just started

- Camposol (the largest producer in the world) is starting 3 trials this year


PELIGRO
LOTE: 18
VARIEDAD: MALUMA
PATRÓN: ANTILLANO
SIEMBRA: OCTUBRE 2013
N° PLANTAS: 83
ÁREA: 0.20
SECTOR: SOLEDAD BAJA