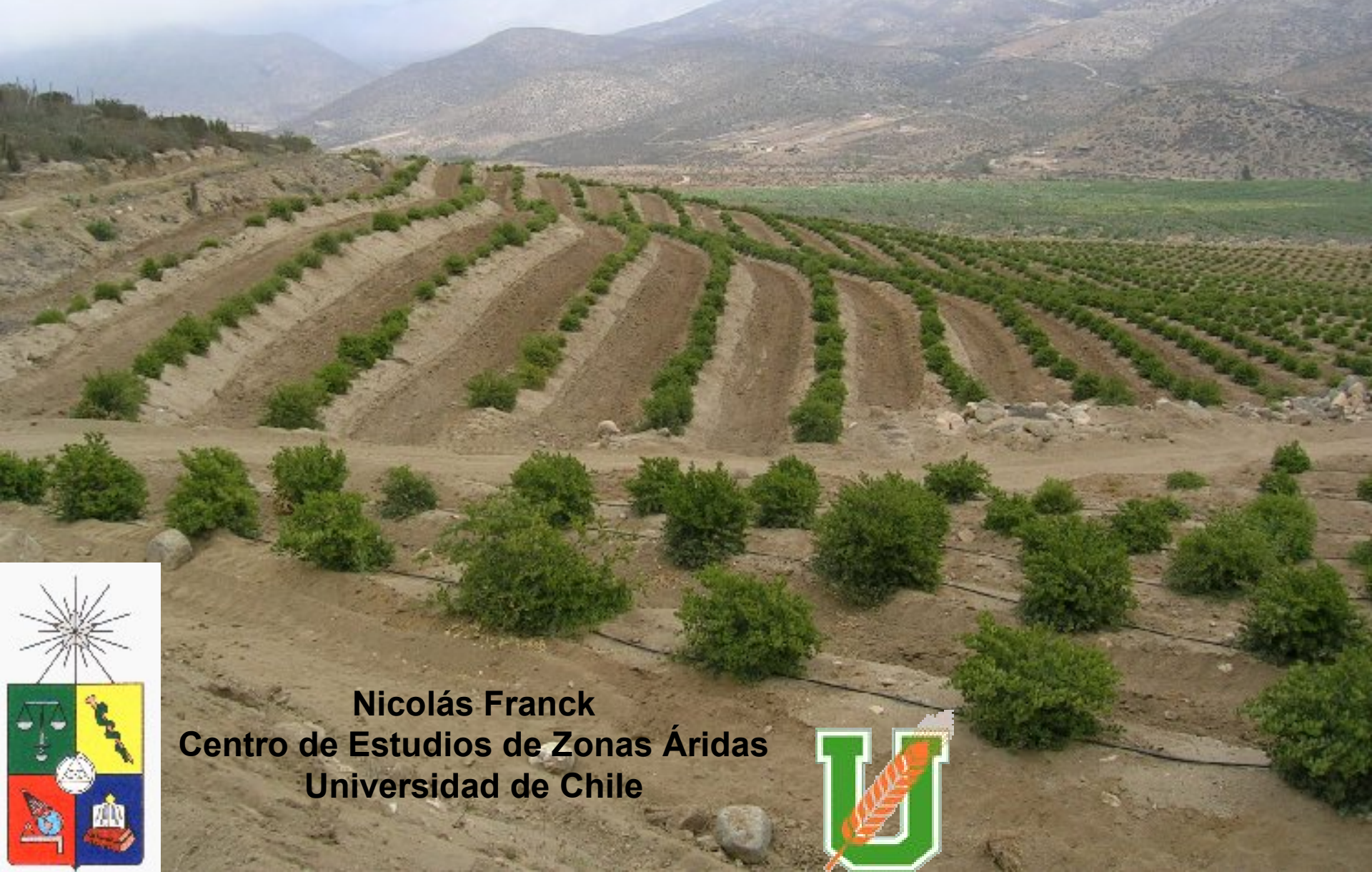


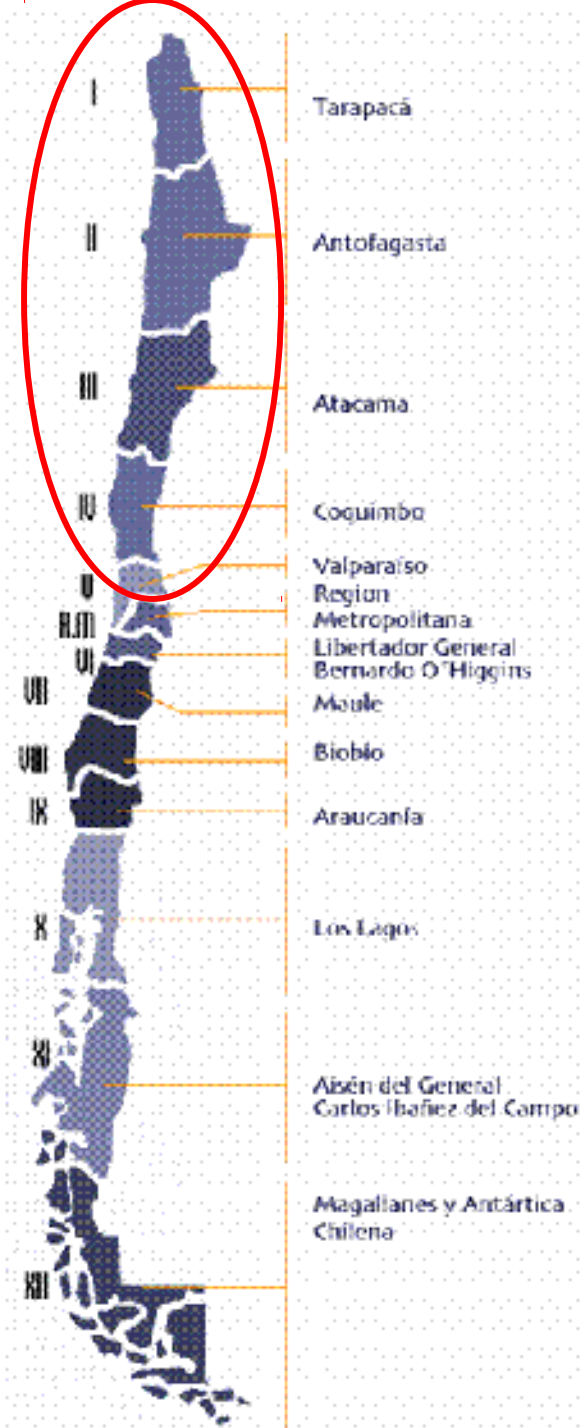
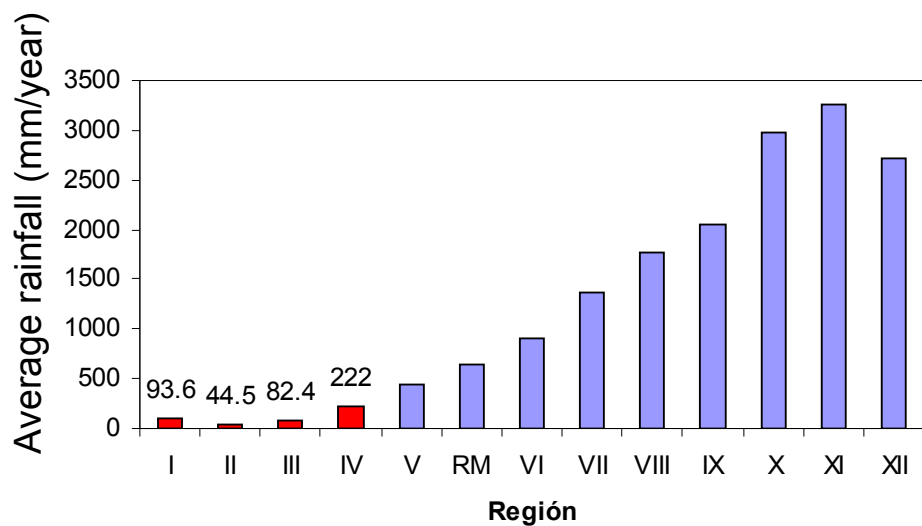
Fruit species with low irrigation requirement and drought tolerance as a water saving strategy in arid zones



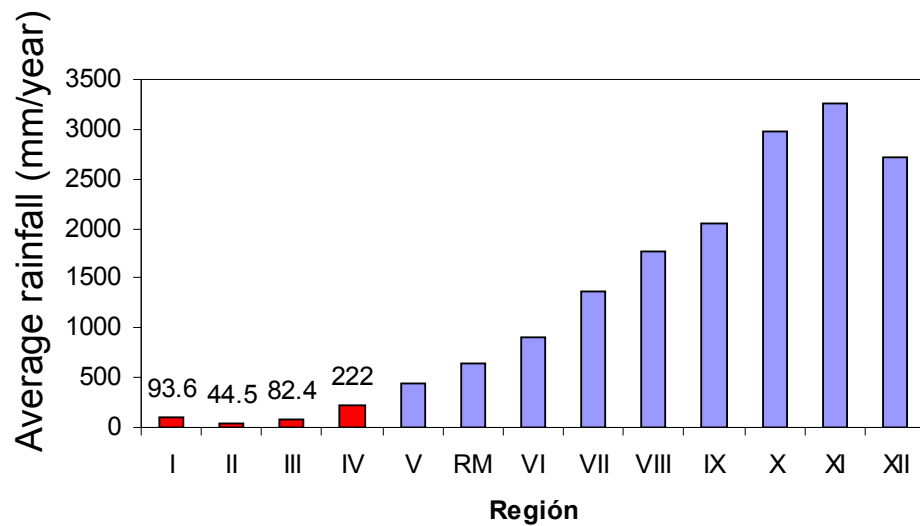
Nicolás Franck
Centro de Estudios de Zonas Áridas
Universidad de Chile



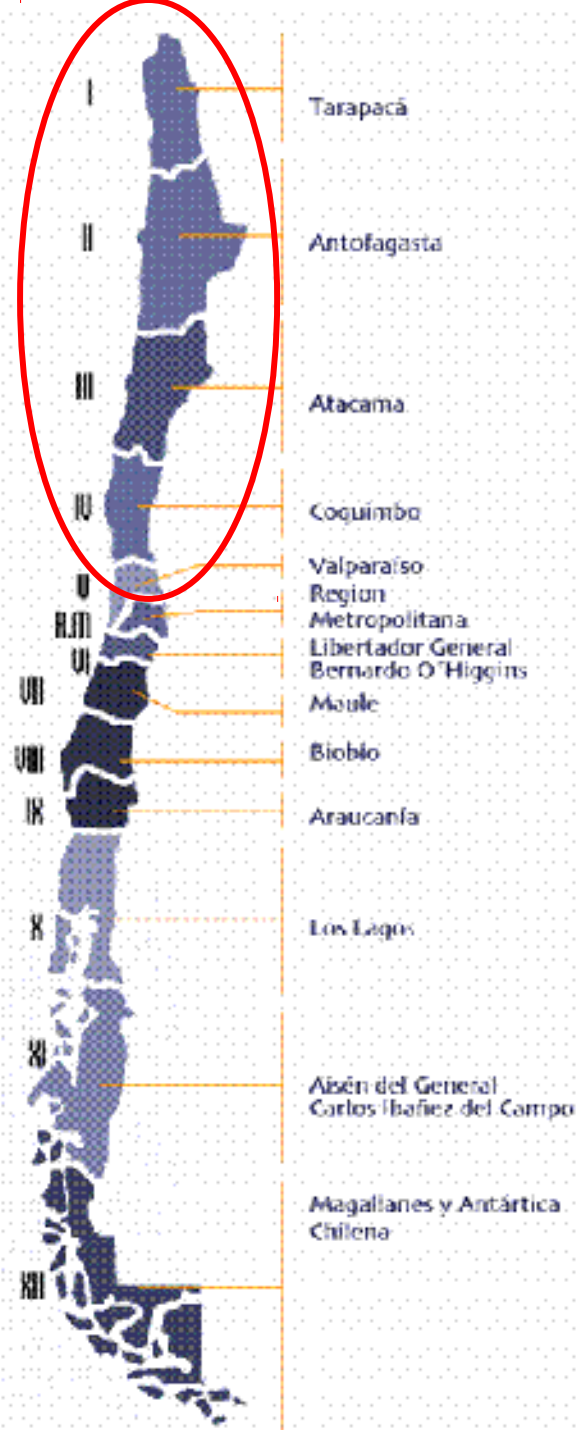
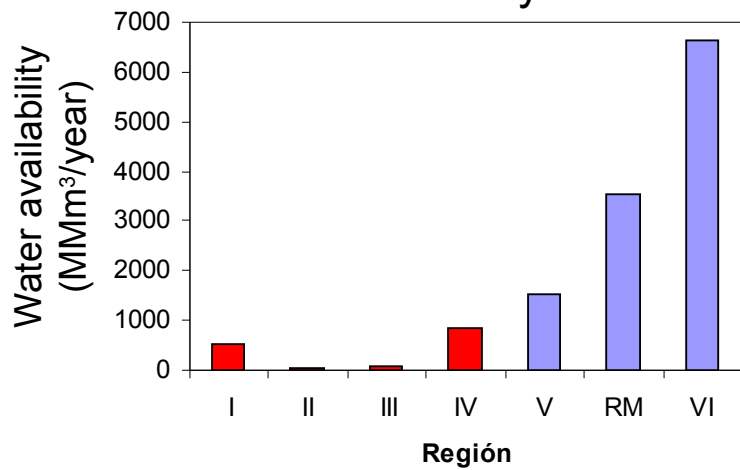
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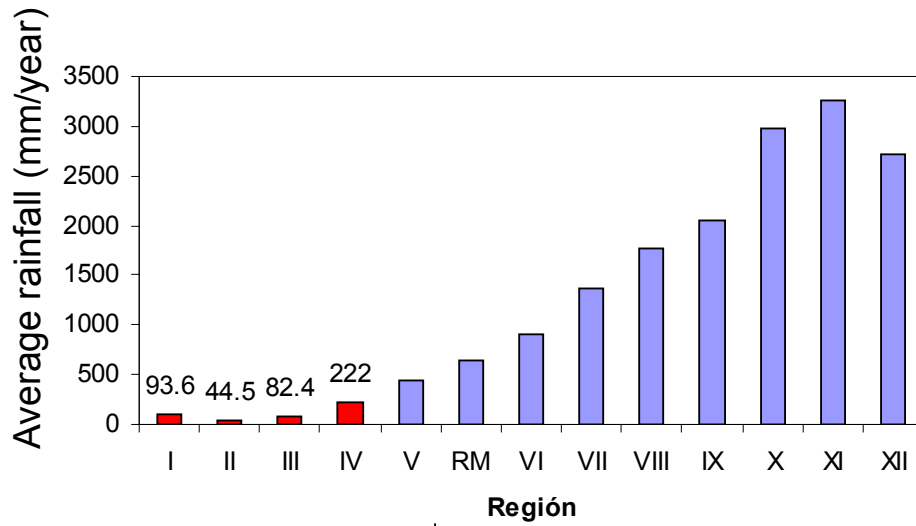
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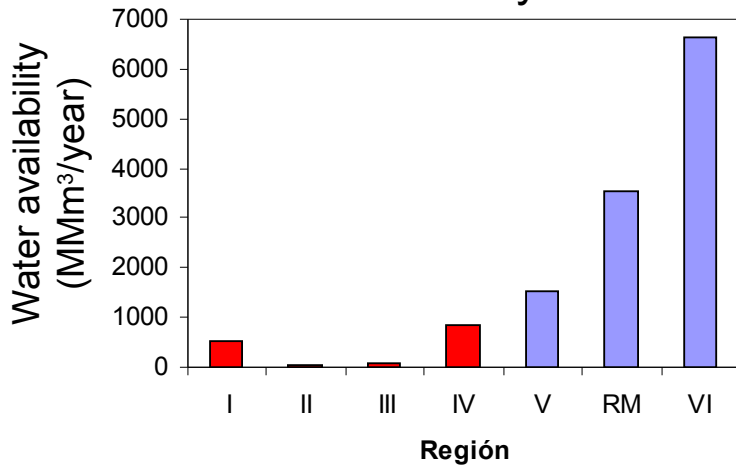
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Availability



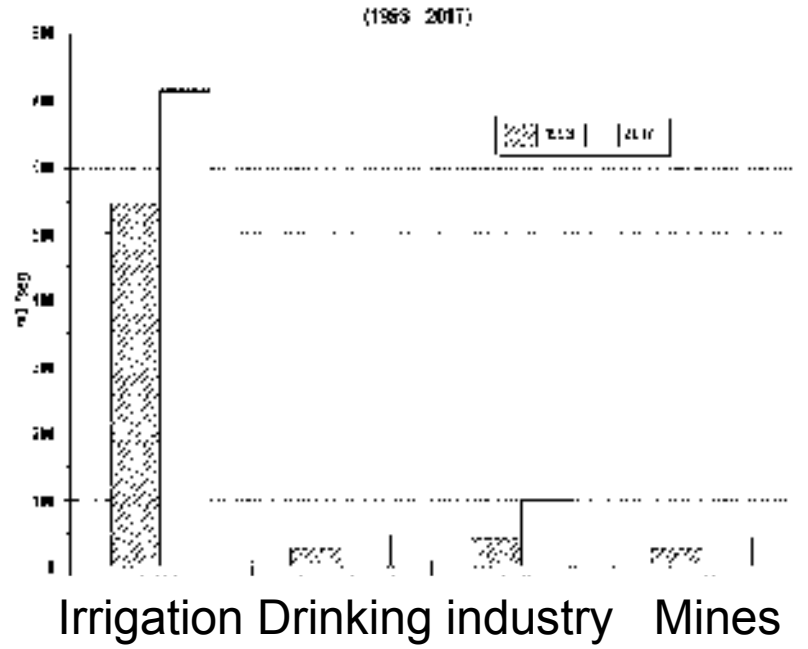
Context



Availability

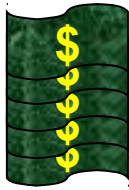
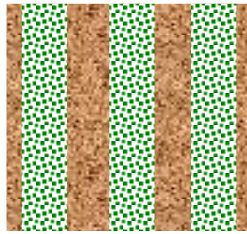


Demand (m³/s)

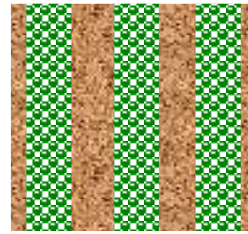


Why low water requirement?

Traditional

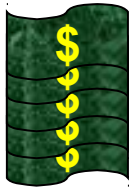
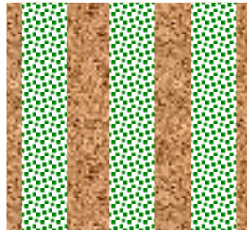


Low water requiring

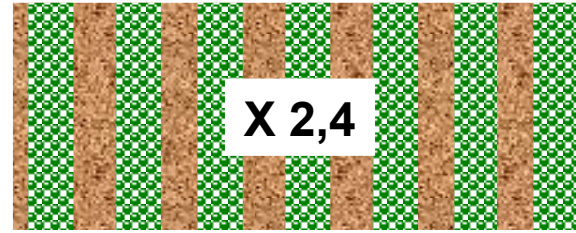


Why low water requirement?

Traditional

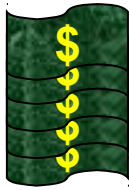
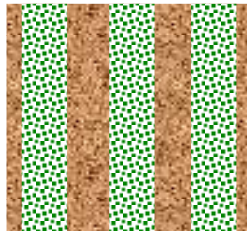


Low water requiring

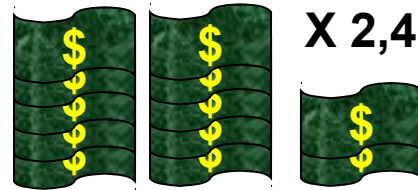
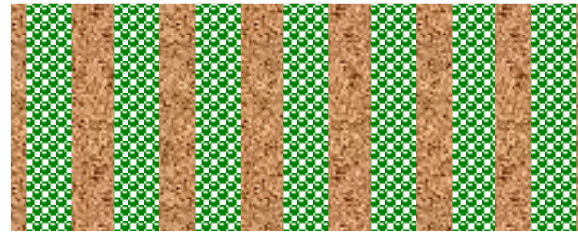


Why low water requirement?

Traditional



Low water requiring



Why low water requirement?

**Also: lower energy
consumption**

**Not the same to pressurize
10.000 m³ than 5.000 m³**



Why low water requirement?

Also: Water footprint



Why drought resistance?



Not to lose investment

Prioritize more sensitive crops



Species we study



Fig (*Ficus carica*); aws*: 40%



Pomegranate (*Punica granatum*); aws: 45%



Jojoba (*Simmondsia chinensis*); aws: 65%



Caper (*Capparis spinosa*); aws: 65%

*: approximate water saving

Species we study



Tamarillo (*Cyphomandra betacea*); aws: 45%



Date Palm (*Phoenix dactylifera*);
aws: 50% after reaching water table



Pitahaya (*Hylocereus sp.*);
aws: 80%



Prickly Pear (*Opuntia ficus-indica*);
aws: 75%

Methodology: germplasm selection



Methodology: propagation



Methodology: adaptability



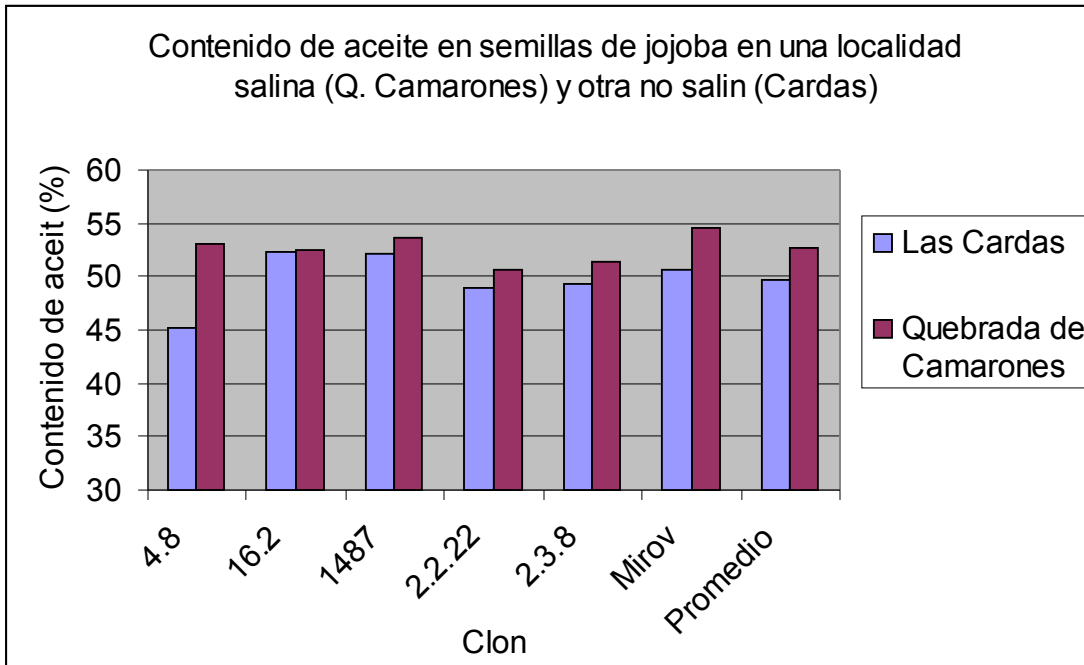
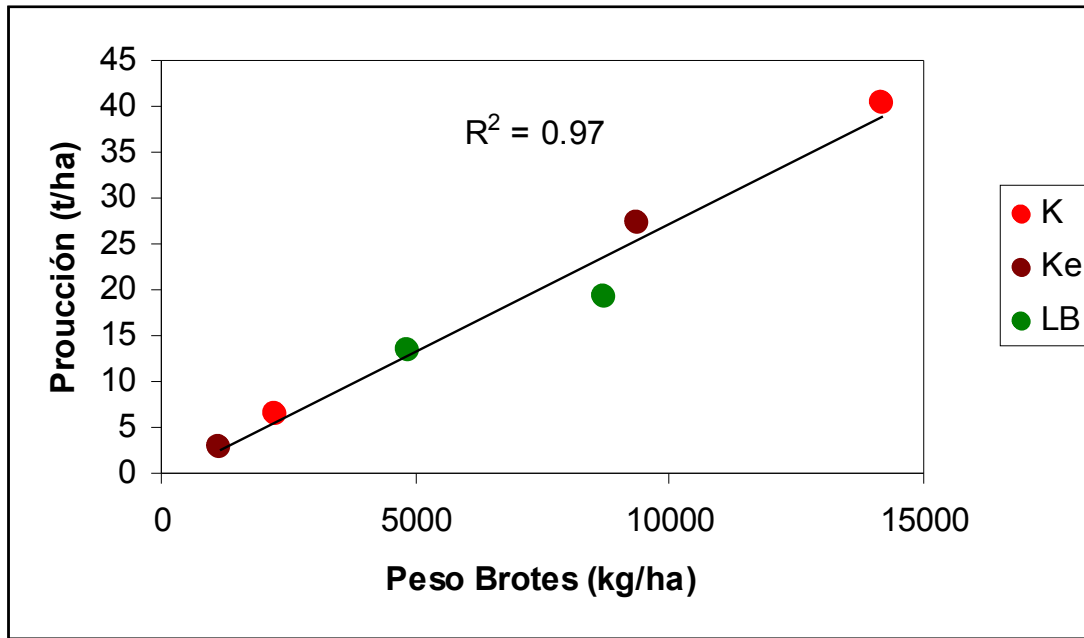
Methodology: agronomic requirements



Methodology: agronomic management



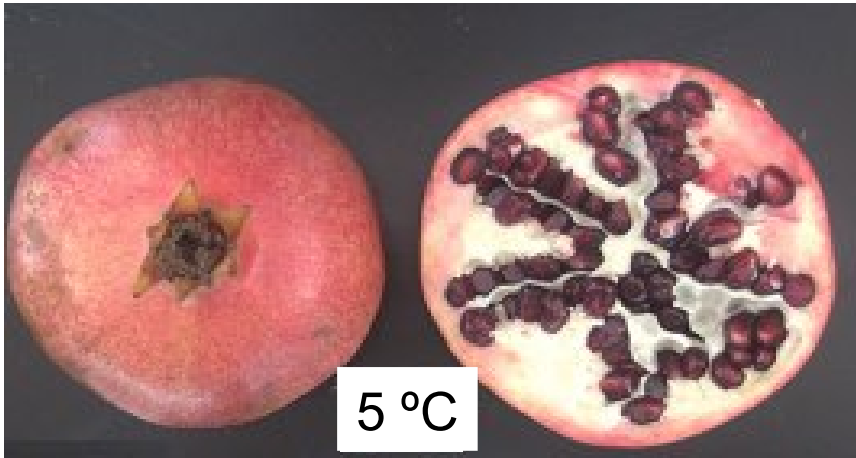
Methodology: variety development en genotype x environment interactions



Methodology: value addition



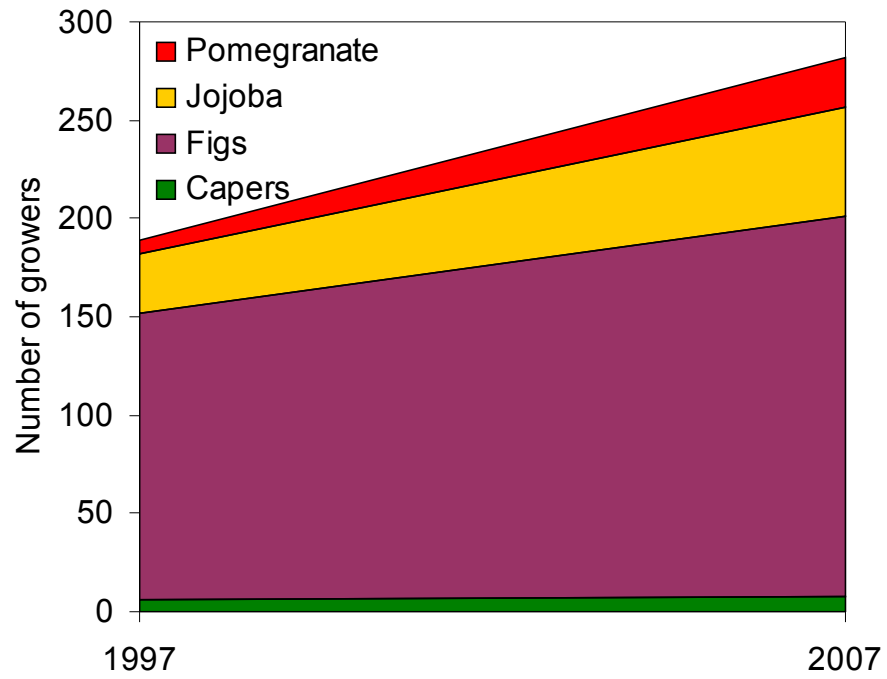
Methodology: postharvest and marketing



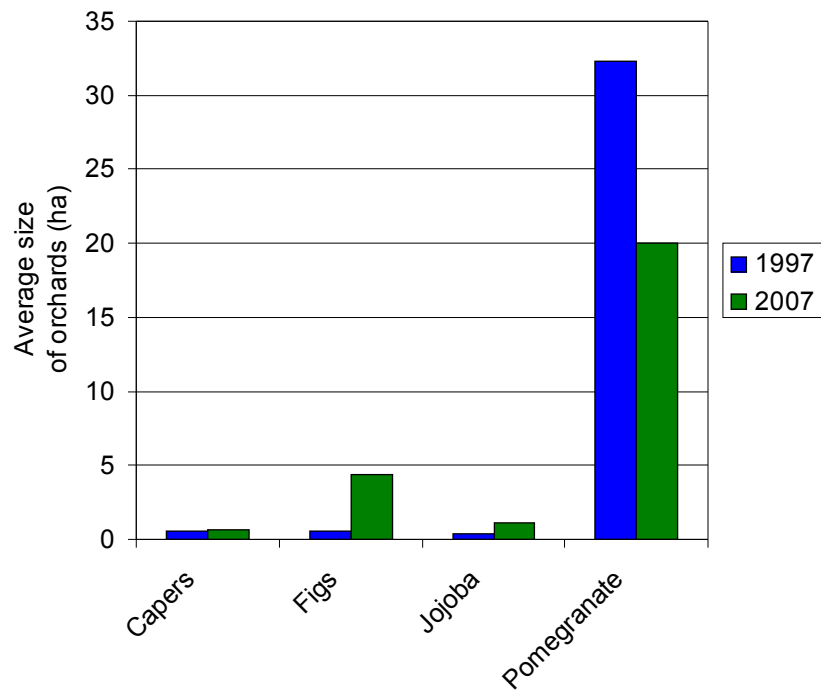
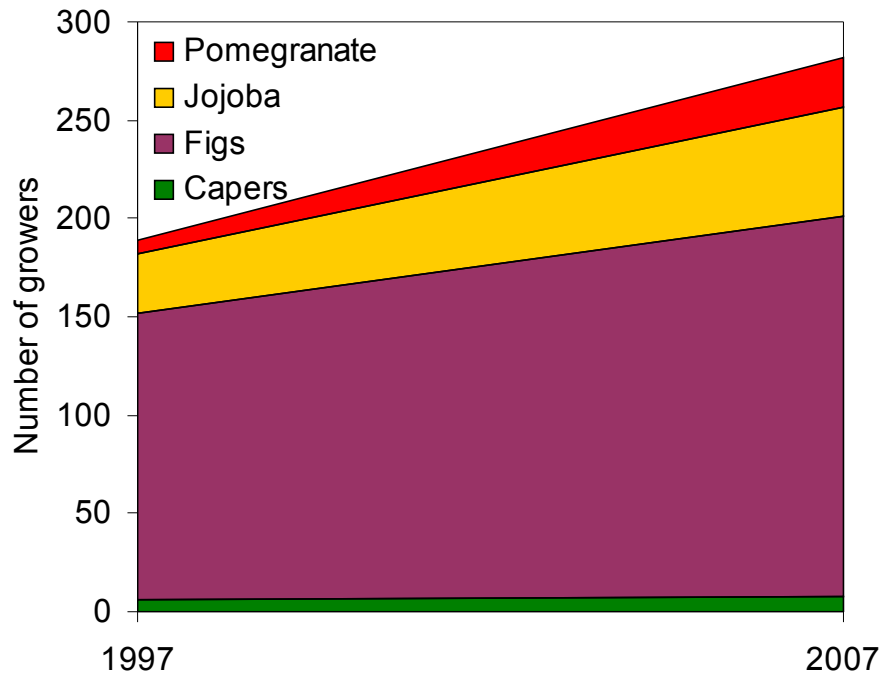
Results: technology



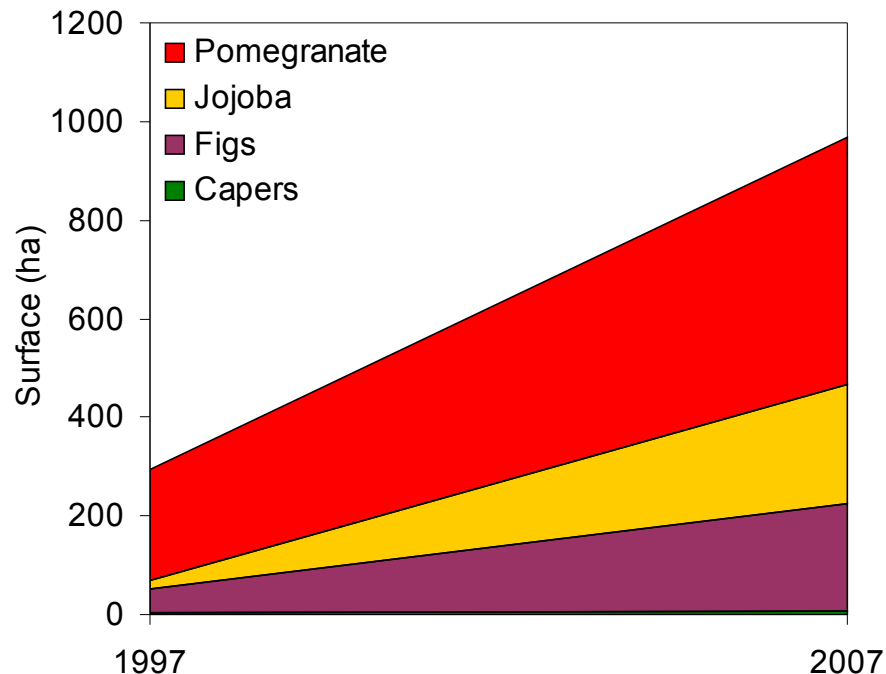
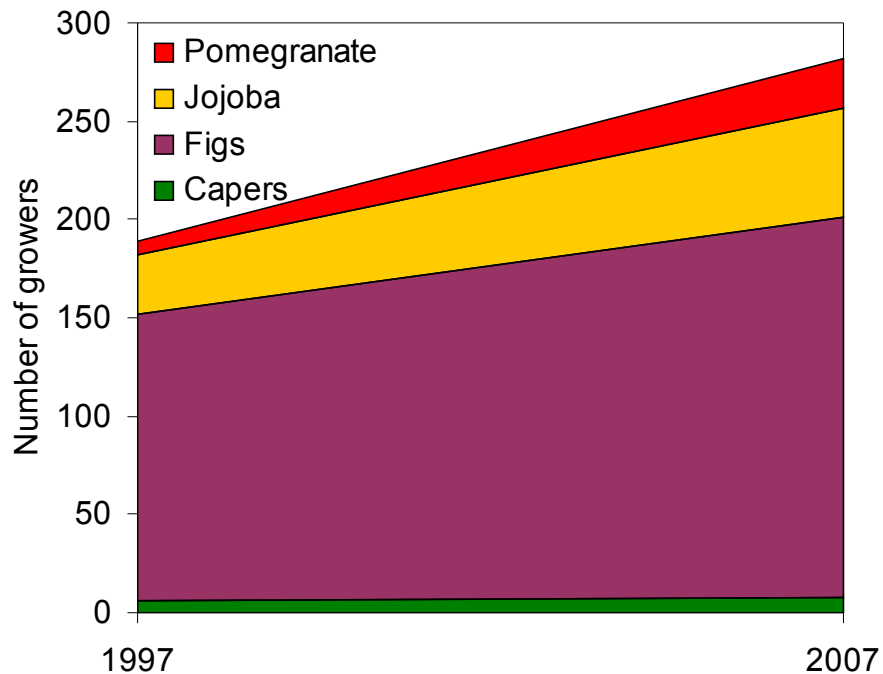
Increment in growers



Increment in growers



Increment in growers and surface



⇒ Irrigation water savings equivalent to **4.315.000 m³/year 2010 vs. 1997** and **14.380.000 m³** during the decade.

Concluding remarks

- Use of fruit trees with low water requirement and drought tolerance can significantly reduce water consumption for irrigation
- In order for this technology to be adapted by growers technical studies (water requirements, climatic adaptation, etc.) must be combined with the development of technology and economic and market studies.
- The impact of this research line depends on market fluctuations and: some results may have a long “latent” period.
- There is still a broad range of species to be studied...



acknowledgements:

growers:



Agrícola
H&C



Grower organizations:



APECO



Funding agency:



+ so many others...

THANK YOU!

