

Plántulas de Esperanza

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FROM THE AMERICAN PEOPLE

HORTICULTURE
INNOVATION LAB

UCDAVIS
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Plántulas de Esperanza-Overview

Who:

- University of Wisconsin
- Zamorano
- Catholic Relief Services

Where we work:

Honduras - Guatemala

What we do: Validation of Vegetable grafting

Technology for development of value-added businesses and reduce risk in production –



Nutrition and families

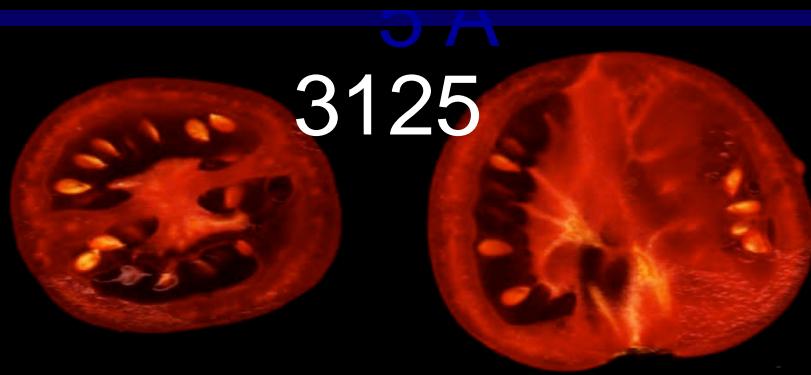
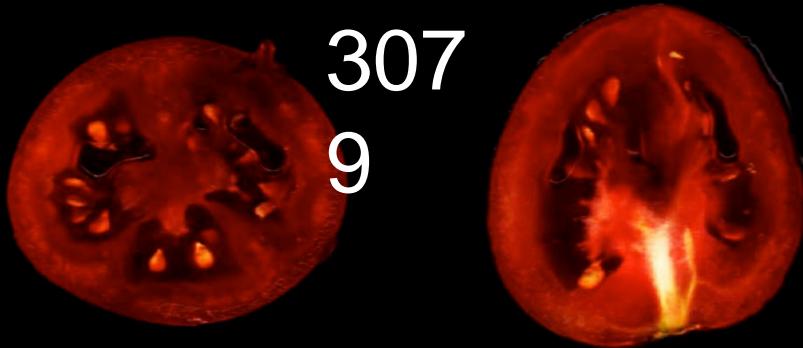


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Results / Impacts

- **Identified tomato cultivars with virus resistance and desirable market characteristics**





Problem:

Resistant to virus,
but not to soil
pathogens
Ralstonia

Dilemma?

how to get resistance to BOTH virus and
soil pathogens ? Breeding??

Hybrid

not genetic - physica

Scion resistant to
virus

Rootstock resistant
to root pathogens,
i.e. *Ralstonia*
Fusarium and
nematodes





Original business model:

Women's groups sell flats of virus resistant seedlings.

New business model:

Women's group sell flats of added-value grafted plants

Grafted plants and roots

Data from
Ing. Katherine Duran
Instituto Tecnológico
de Costa Rica



*no tomatoes
Grown in
San Carlos
due to root
pathogens

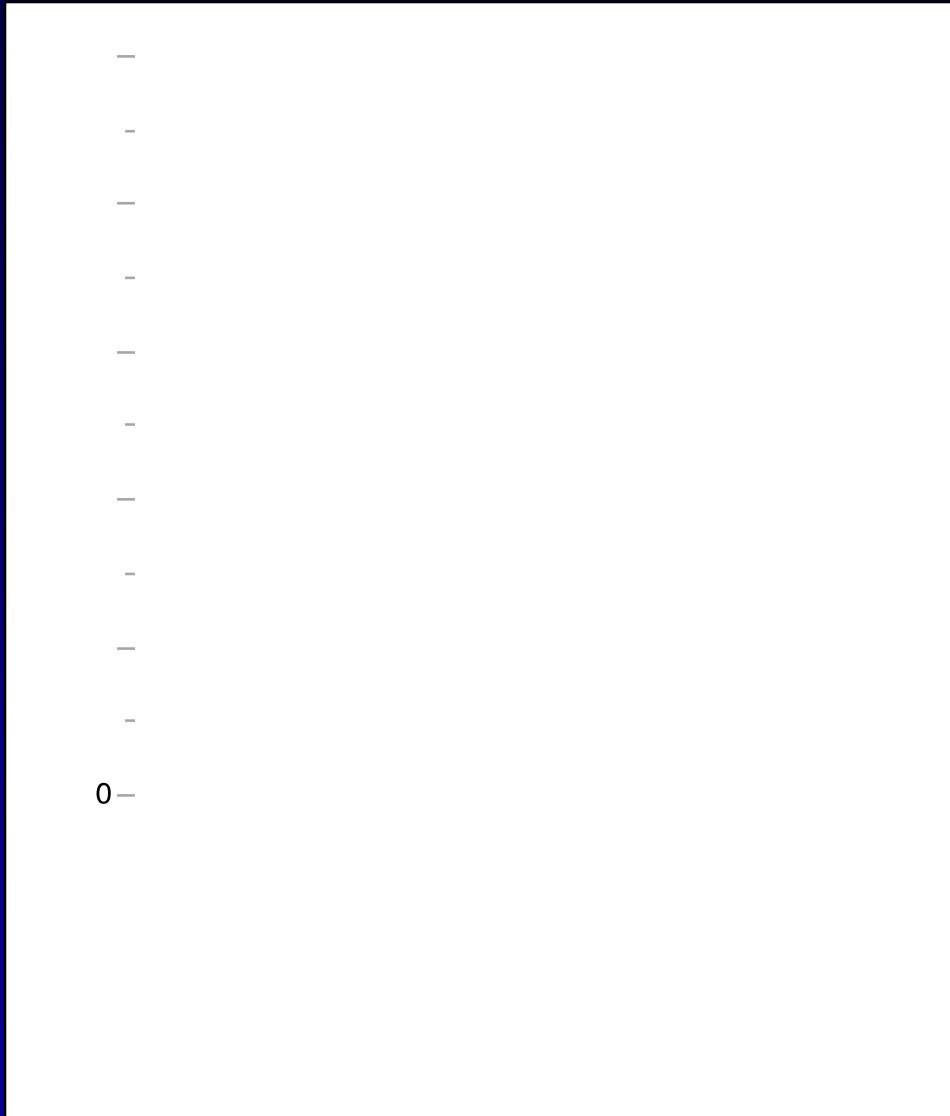
Yield (Kg) data from grafting trial
Instituto Tecnológico de Costa Rica – San Carlos

Scion		
	3125	3079
Non-grafted	Dead	Dead
Self-grafted	Dead	Dead
Grafted onto 'BB'	1.98	0
Grafted onto 'Armada'	1.12	1.12

Zamorano, Honduras

Percent increase in
yield of grafted plant
Compared to non-
grafted

**Grafted
Combinations
Yielded 100%
more**



Commercialization in Costa Rica



New , grafted tomato
only available for
last two years

630,000 plants sold
In 2016

Commercialization in Costa Rica

Scion seed*

Rootstock seed

Greenhouse

labor *

Grafting labor

Grafting clip

Seedling costs \$US

Grafted **Traditional**

.52-.61

.19-.23 *

Grafted plants
can cost 2 – 3 X

Commercialization in Costa Rica

12

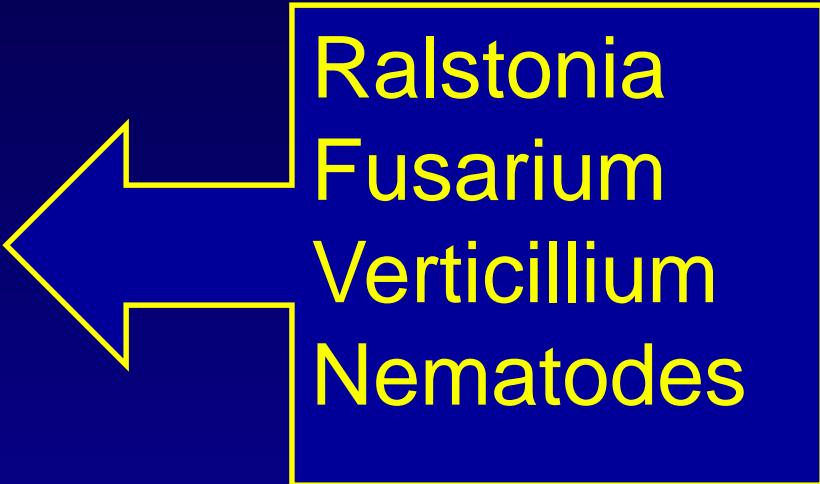


Wet season – 14 weeks after transplant



Commercialization in Costa Rica **benefits**

Resistance to soil
borne pathogens



Ralstonia
Fusarium
Verticillium
Nematodes

longer production season

Higher quality, more marketable fruit

*** BUT need scion resistance to virus !**

Grafted tomatoes work



- Women's groups can produce a value-added product as a small business – grafted tomato seedlings
- 100% yield increase due to longer production season and reduced risk to growers