7th Seed Congress of the Americas

Promoting Seed Business in the Americas

September 9 - 11, 2019
Buenos Aires, Argentina

Experiencia de Innovación Asociativa para el desarrollo de nuevas variedades frutales con apoyo de biotecnología en Chile

Rodrigo Cruzat
Biofrutales

SAA
Seed Association of the Americas

Role of FRESH FRUIT sector in CHILE

CHILEAN FRESH FRUIT FIGURES

EXPORT FRESH FRUIT 2017	VALUE
Surface (hectares)	320.000
Volume (Thousand Tons)	2.837
FOB (Millions US$)	5.285
Growers	27.917
Export Growers	9.100
Export Companies	700

Fruits from Chile

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CHILE ON THE WORLDWIDE FRESH FRUIT EXPORT RANKING

WORLD	SOUTHERN HEMISFERE
1º	1º
2º	1º
2º	2º
3º	1º
4º	1º
6º	1º








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CHILEAN FRESH FRUIT EXPORT INDUSTRY: SOME CHALLENGES

Labor Cost

Productivity

Climatic Change

Pests and Diseases

Water Supply

Food Safety

FOOD SAFETY

New markets

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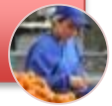
GENETIC INVENTION - NEW FRUIT VARIETIES ATRIBUTES CAN PLAY AN IMPORTANT ROLE

- Less labor requeriments – easier

Labor Cost



- More productive
- Early production

Productivity

- Adapted to warmer winters
- Frost tolerance

Climatic Change

- Natural resistance

Pests and Diseases

- Less water demand

Water Supply

- Less chemicals

Food Safety

- Atractivness
- Antooxidants

New markets

BREEDING AND BIOTECHNOLOGY IN FRUIT:
OPPORTUNITIES AND CHALLENGES

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COMMERCIAL DECISION IN OTHER INDUSTRIES

CAN WE DO THIS IN THE FRUIT WORLD? IS IT THAT EASY?

BETTER IMPROVED BREEDING – SMART BREEDING - COULD DO THIS FOR US

PINK LADY ®

HONEY CRISP

BIOFRUTALES Consortium: Collaboration experiencies

BIOFRUTALES CONSORTIUM

Company formed in 2006 by 13 PUBLIC AND PRIVATE partners: Universities, Research Centers and Companies, to build fruit breeding programs to developpe new varieties for Chile and the world.

INIA
Universidad Andrés Bello
Universidad Federico Sta. María
Universidad de Talca
U. de Chile
Fundación Chile
Agrícola Brown
Univiveros
Vivero El Tambo
Vivero Los Olmos
Viveros Requínoa
ANA Chile
Fedefruta

Proyecto apoyado por CORFO

INNOVATIVE RESEARCH PLATFORM – OPEN INNOVATION

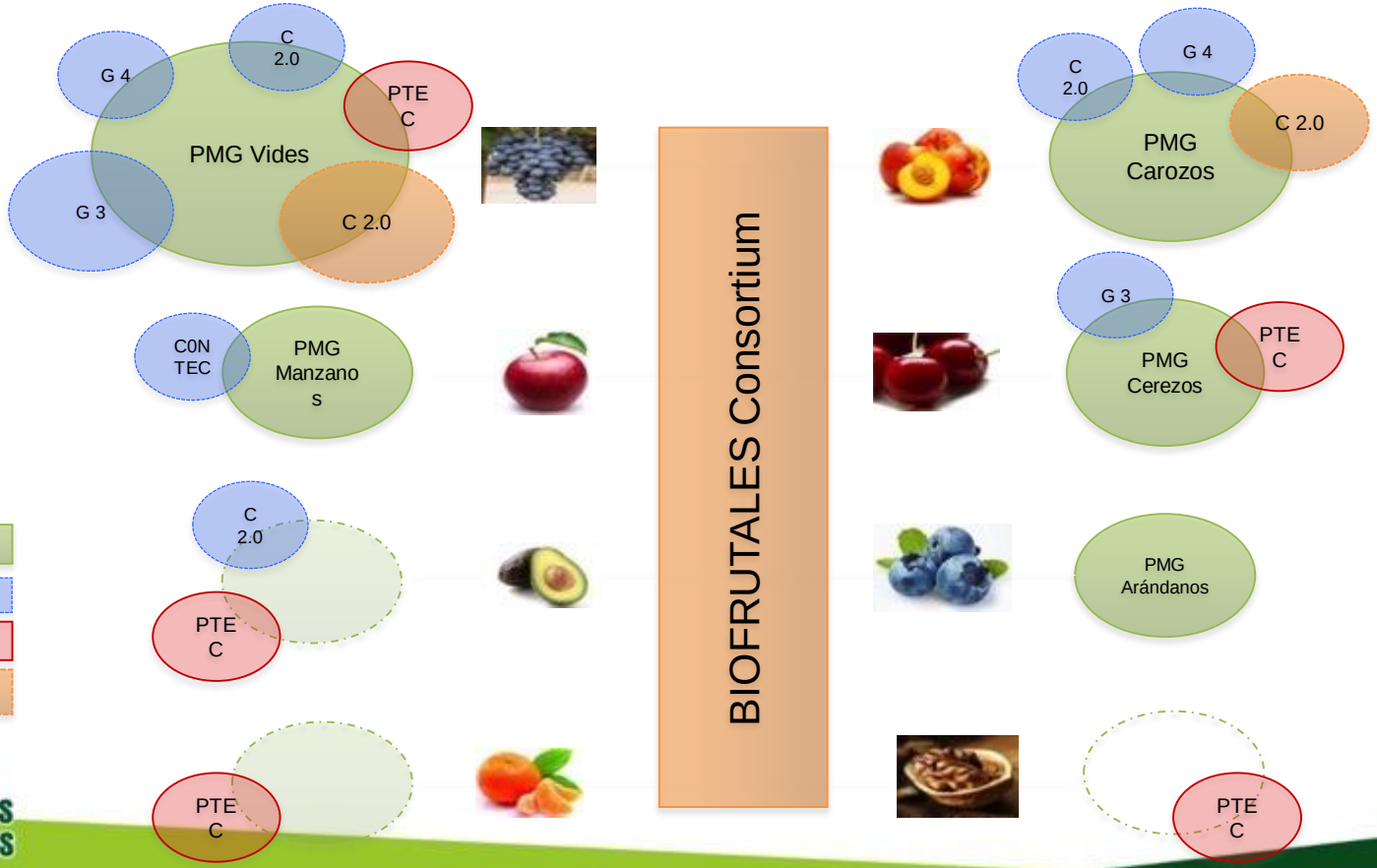

TABLE GRAPES MODEL

- Dr. Humberto Prieto - INIA

GENETIC ENG.

- Dr. Patricio Hinrichsen - INIA
- Dr. Nilo Mejia – INIA

BIOTOOLS

- UTFSM
- Dr. Simon Ruiz – U Talca

BREEDING

- Dr. Ariel Orellana – UNAB
- Dr. Reinaldo Campos – UNAB

- Dr. Paola Barba - INIA

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BIOFRUTALES Consortium RESULTS

- ✓ VARIETIES


INIAGRAPE-ONE

MAYLEN®

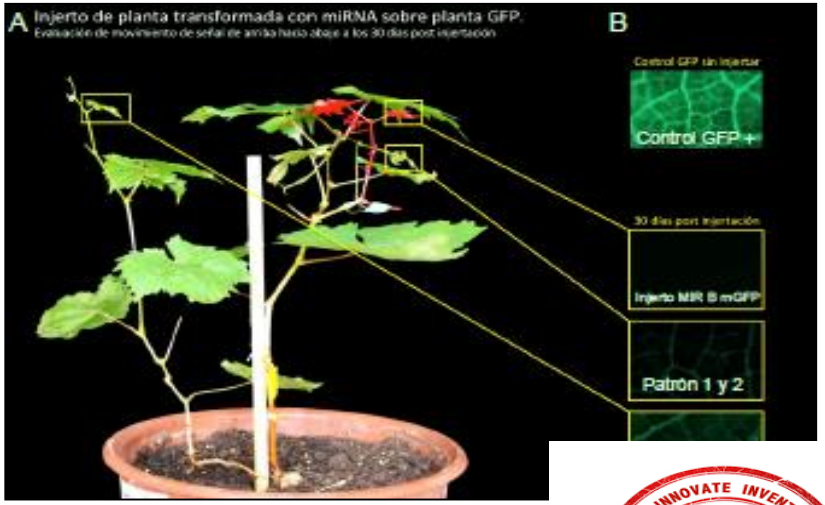
Iniagrape-one cv.

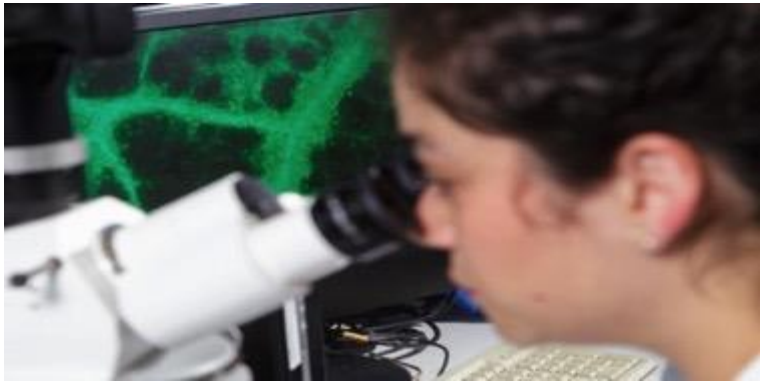
- ✓ Transformed Fungus Resistant Thompson Seedless

Control

INGENIERÍA GENÉTICA 2.0

- ✓ NBT`s – Gene Editing and smallRNA´s



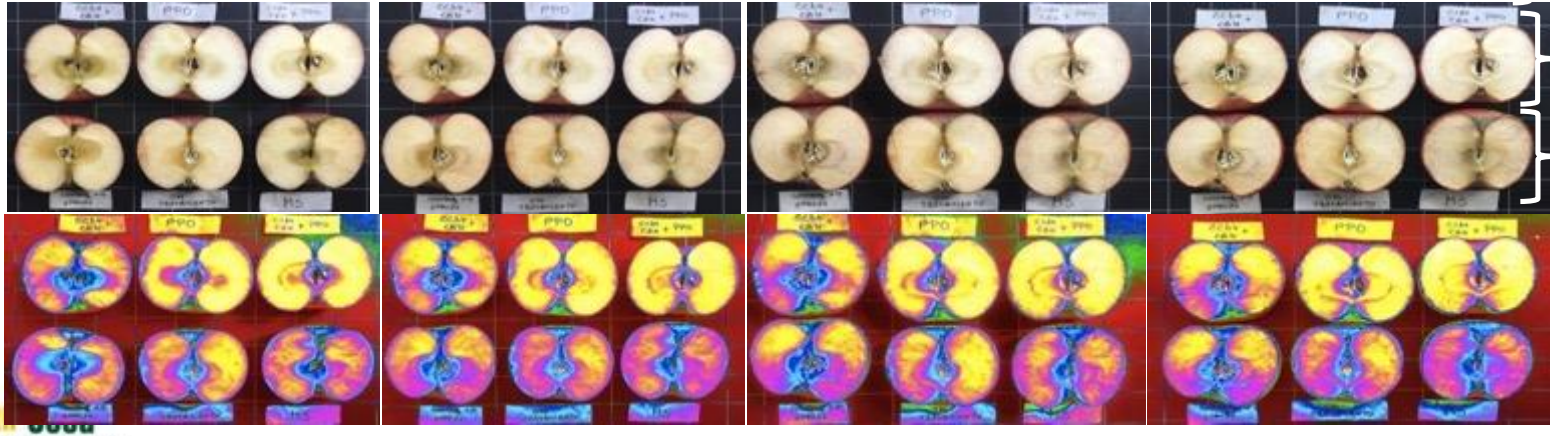


- CRISPR
- micro RNA
- Vectores CISGENICOS

APPLES: REDUCING OXIDATION PROCESS AND IMPROVING ANTIOXIDANTS COMPONENTS

Hours after cutting

0.5h 4.5h 24h 48h



Edited transient

Control

BUILDED CAPACITIES ON BIOFRUTALES CONSORTIUM GROUP

a) Transgenia

b) NBT / Gen Editing

i. Cisgenia/Intragenia

ii. mRNAi

iii. Crispr





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MORE THAN 90 PROFESSIONALS FROM 5 DIFERENT TECHNOLOGICAL CENTERS AND TRANSFER COMPANIES

INIA Ministerio de Agricultura Gobierno de Chile

INIA

Universidad de Chile

Universidad Andres Bello

Talca Universidad Chile

Universidad Tecnica Federico Santa Maria

A.N.A. Your partner for South America

BIOFRUTALES
Genetic Fruit Improvement

Rodrigo Cruzat
Gerencia

Tamara Mendez
Ejecutiva Técnica y Financiera de Proyectos

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