



INTERNATIONAL CONGRESS ON CITRUS NURSERIES

RIVERSIDE & VISALIA CONVENTION CENTER,
CALIFORNIA, US
SEPTEMBER 29 - OCTOBER 6, 2022

The citrus nursery tree certification program in Spain



AVASA
AGrupación
DE VIVERISTAS
DE AGRIOS, S.A.

more than 45 years serving the citrus industry

José Cuenca
AVASA Director

AVASA



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DE VIVERISTAS
DE AGRIOS, S.A

Our company



Created in 1976, with the aim to provide citrus plant material

- ✓ Best quality
- ✓ Sanitary and Genetic Guarantee

➤ Certification program



AVASA is the first and the main citrus base nursery in Spain, with more than 200 varieties that are cultivated, evaluated and reproduced, including the most important ones, and more than 100 AVASA-PRI® exclusive varieties. AVASA nurseries has around 90% of the Spanish plant marketing.



AVASA is the promoter of changing the varietal and productive structure in the Spanish citrus industry.

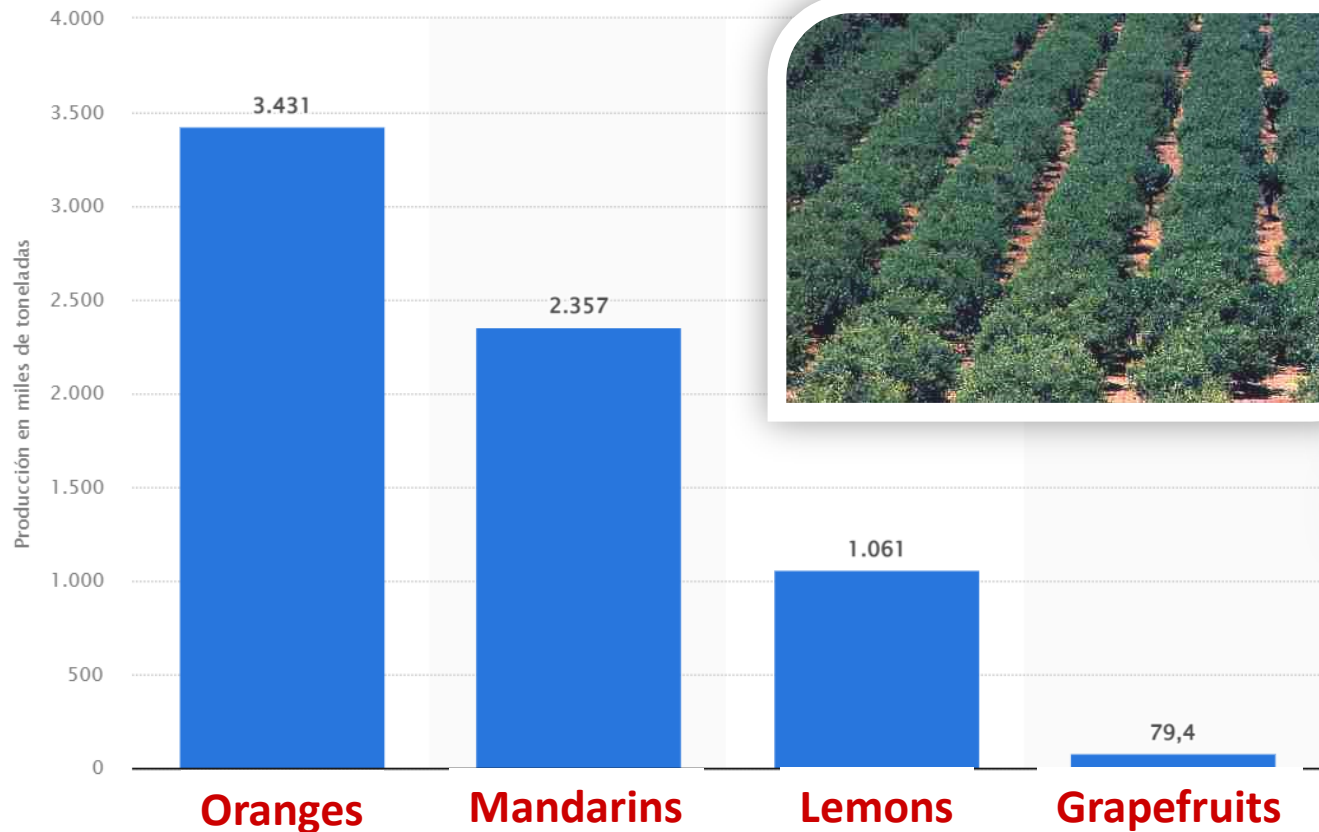


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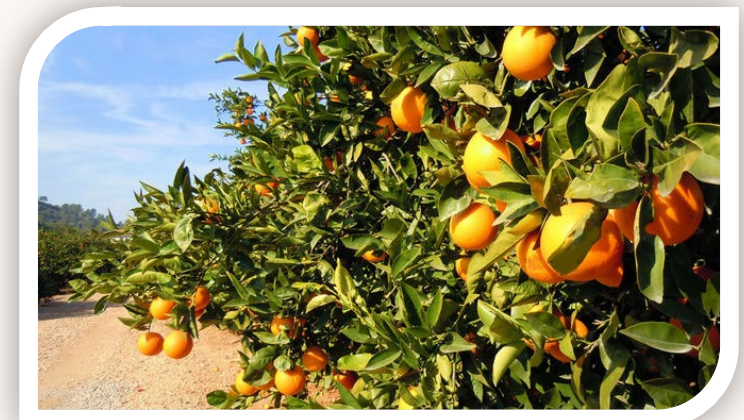
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Tradition + Innovation

Some figures of Spanish citrus industry



- 135 million trees est.
- 300.000 Ha
- $\approx$ 7 million tons
- Main fresh fruit exporter (60% of production / 25% of world trade exports)





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Sustaining competitiveness in the citrus industry



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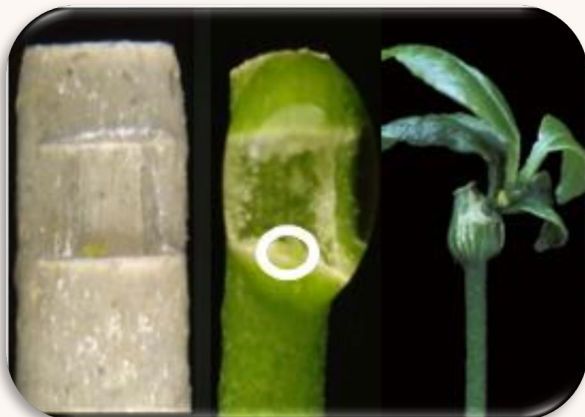
Certification program

CERTIFICATION PROGRAM

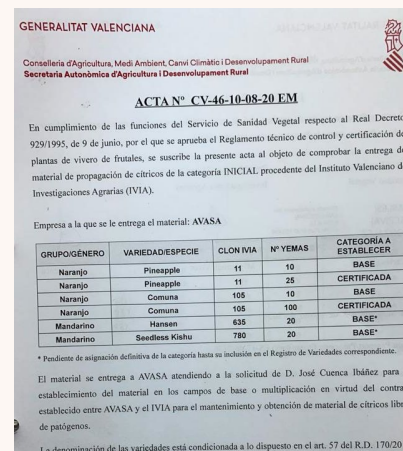
Import / Sanltation
IVIA

Initial Category
IVIA

Base Category
AVASA



18 – 20 months



Apply for Register
CVPO / OEVV
either for public or PBR

DUS test
5-6 years

If positive..

New variety

CERTIFICATION PROGRAM

Base Category
AVASA



Certified Category
AVASA
Licensed nurseries



Certified plantlets
Licensed nurseries



info@viverosavasa.com ES-17-12/1000 Pasaporte Fitosanitario/Plant Passport Reglas y normas U.E.	
Citrus sinensis	
Variedad	Clon IVA
Lane Late	198
Fecha Corte	16/09/2020
Categoría:	Base
Nº Injertos:	150
Viveros Alcanar, S.A.T.	
CODIGO TRAZABILIDAD B20 2836	
Tratamientos	
4032	12A85A
NºReferencia	2836 1285A

CERTIFICATION PROGRAM

Certified plantlets
Licensed nurseries



**Plantations or
top-grafting**



REGISTERED VARIETY

	 GENERALITAT VALENCIANA	PLANTON CERTIFICADO Reglas y normas de la UE	Naranja
Pasaporte Fitosanitario/Plant Passport			Especie: <i>Citrus sinensis</i>
ES/17/12/XXXX			Variedad/clon: Navelina / 7
GV2019-0001			Patrón/clon: Macrophylla
			Productor: (nº pasaporte o nombre vivero)



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Summary of Regulations on Pest and Disease control

Lists of Non-Quarantine Regulated Pests (NQRP) for visual inspection and test if needed

List 1

Fungus and oomycetes

Phytophthora citrophthora (R.E.Smith & E.H.Smith)
Leonian [PHYTCO]

Phytophthora nicotianae var. *parasitica* (Dastur)
Waterhouse [PHYTNP]

Insects and mites

Aleurothrixus floccosus Maskell [ALTHFL]

Parabemisia myricae Kuwana [PRABMY]

Nematodes

Pratylenchus vulnus Allen & Jensen [PRATVU]

Tylenchulus semipenetrans Cobb [TYLESE]

List 2

Bacteria

Spiroplasma citri Saglio et al. [SPIRCI]

Fungus and oomycetes

Plenodomus tracheiphilus (Petri) Gruyter,
Aveskamp & Verkley [DEUTTR]

Virus, viroids, virus-like diseases and phytoplasmas

Agente de la cristacortis de los cítricos [CSCC00]

Viroide de la exocortis de los cítricos [CEVD00]

Agente de la impietratura de los cítricos [CSI000]

Virus del manchado foliar de los cítricos [CLBV00]

Virus de la psorosis de los cítricos [CPSV00]

Virus de la tristeza de los cítricos [CTV000] (cepas de la UE)

Virus de la variegación de los cítricos [CVV000]

Viroide del enanismo del lúpulo [HSVD00]



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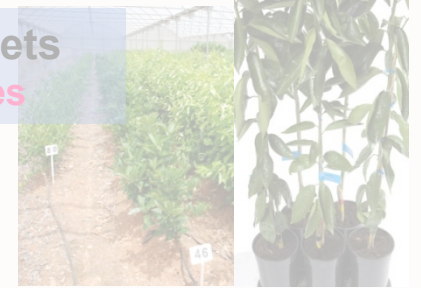
Initial Category
IVIA

Base Category
AVASA

Certified Category
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Licensed nurseries



Certified plantlets
Licensed nurseries



Twice a year
List 1 & 2

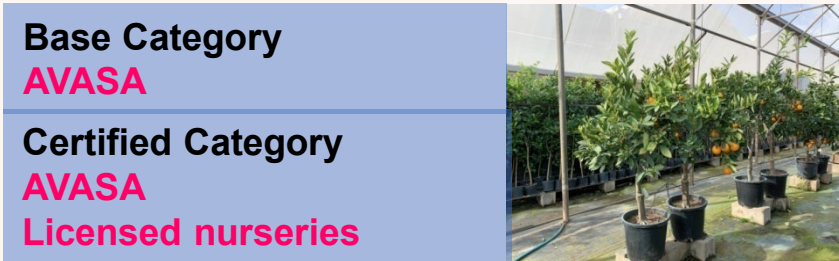
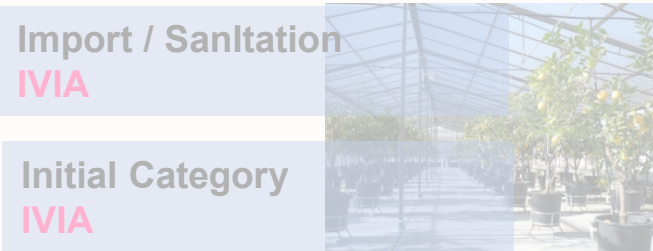


Every initial plant every year
Spiroplasma citri

Every initial plant every three years
CTV

Every initial plant every six years
Rest of NQRP in List 2
And in case of doubts regarding the
presence of NQRP in List 1.

CERTIFICATION PROGRAM



Twice a year
CTV
Spiroplasma citri
Plenodomus tracheiphilus

Once a year
Rest of List 1 & 2



Every base plant every three years
and
Representative portion of every lot of
mother plants every four years

CTV

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Initial Category
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All year round

List 1 & 2



1/1000 every lot before labeling

CTV

A) Normas de calidad exterior para los plantones de cítricos:

	Edad del injerto	
	Un año	Dos o más años
Sistema radicular:		
Conformación y desarrollo (*)	2	2
Dimensiones del cepellón (en su caso)	18 x 20	20 x 22
Tallo:		
Diámetro mínimo medido a 10 centímetros sobre punto de injerto (centímetros):		
Mandarinos y sus híbridos	0,8	0,9
Naranjos, limoneros, pomelos y limas	0,9	1
Desarrollos del brote (centímetros):		
Mandarinos y sus híbridos	60	70
Naranjos, limoneros, pomelos y limas	70	80
Conformación del patrón *	2	3
Conformación del brote *	2	2
Cicatrices en el patrón **	2	2
Cicatrices en el brote **	2	2
Otras (hielo, pedrisco) **	1	1
Endurecimiento **	1	1

Tolerancias: Sobre un 50 por 100 de los plantones de una partida, un 10 por 100 de tolerancias.



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MORE THAN 200 MILLION TREES PLANTED IN SPAIN

Remarks regarding HLB and its vectors in Spain

First reports of *T. erythrae* in Canary Islands (2002).

Present in the North coast (Galicia, Asturias, Cantabria y País Vasco).



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**Cultivar
Innovation**

Breeding objectives

Extended harvesting period

High productivity

Biotic and abiotic stress resistance

Seedlessness

Fruit quality / Nutritional value

Long shelf life (from harvest to consumption)



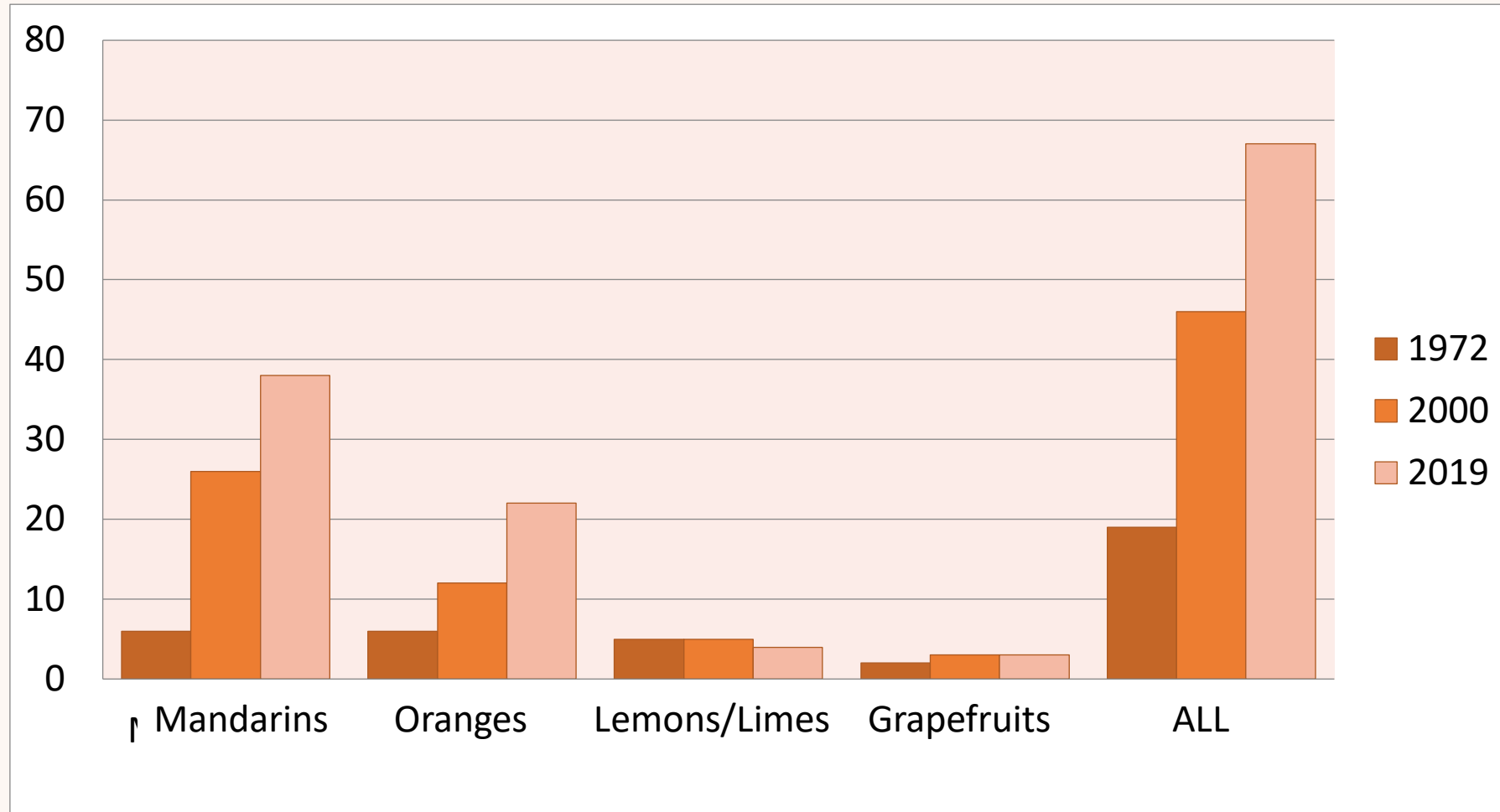


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Increasing citrus variety number



AVASA contribution to varietal diversification

AVASA-PRI® varieties introduced and marketed

	1997		2007		2020	
	Introd	Market	Introd	Market	Introd	Market
Mandarins	2	0	27	4	57	12
Oranges	0	0	14	6	28	12
Lemons / limes	0	0	3	1	7	3
Grapefruits	0	0	0	0	3	0
TOTAL	2	0	44	11	105	30

Top AVASA PRI[®]

*Clemen
Rubi*

Orogrós

ClemenRiu

CLEMEN*luz*[®]

MANDARINA
seedless

MURINA



POWELL
summer navel

Chislett
summer navel

BarnField
Late Navel



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I+D

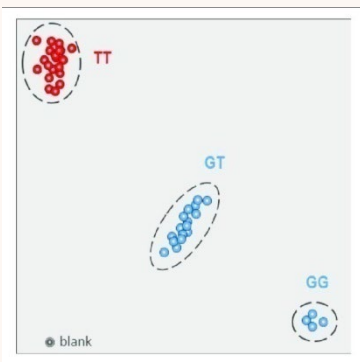
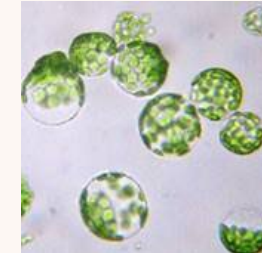
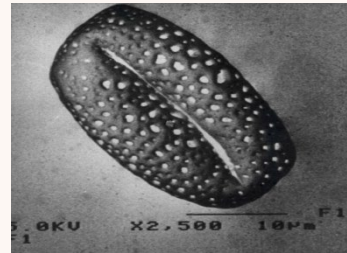
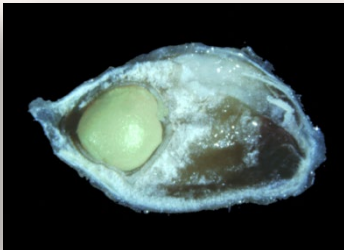
New variety development

Hibridization (diploid and triploid)

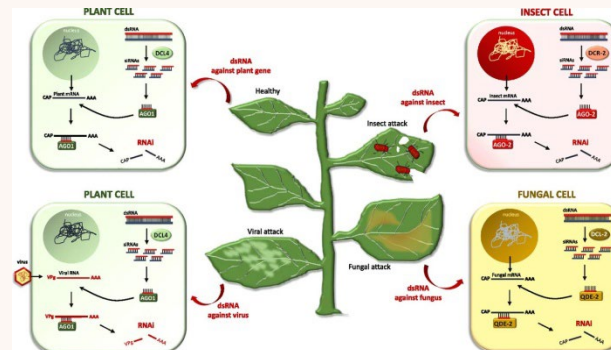
Irradiation

Protoplast fusion

Genomic edition



Marker assisted selection



Viral vectors





www.viverosavasa.com

Thank you!