



# Breeding programs : the new role of IFV and Geno-Vigne<sup>®</sup> as a national technical institute

DE LA VIGNE ET DU VIN

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#### **Geno-Vigne®** is a technical unit

#### Joining together Montpellier SupAgro, INRA DAAV team and IFV



#### Dedicated to characterization of Genetic resources 2008 - 2013 Involved in breeding programs 2013 - 2018





#### the new role of IFV and its department Geno-Vigne® as a national technical institute





**IFV** : Technical Institute, R & D, « from the genes to the bottle »



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#### **Important progress with Clonal Selection**



## Cabernet-Sauvignon clones Napa Valley, CA



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# But Clonal Selection is now reaching some limits...and threats !







Threats









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#### Political, Environmental and Societal Context



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#### **Current regulation with new plant material**

Regulation distinguishes : **possibility of marketing plant material** = **<u>REGISTRATION</u> authorization to produce and market wine** = <u>CLASSIFICATION</u>

#### ✓ <u>REGISTRATION in the CATALOG</u>

Vine section of the CTPS (Permanent Technical Committee of Selection).



* VCU studies focus on :	
✓ Field performances,	
✓Adaptation to environmental	conditions
and technical practices limiting inputs,	
<ul> <li>Resistance to pests and abiotic stresses,</li> </ul>	
<ul> <li>Organoleptic characteristics of the wines.</li> </ul>	

#### **CLASSIFICATION**

Admission to the wine classification can be of two types:

# Temporary Definitive can be planted for experimentation<br/>with limitations (ha, area...) – 10 years max Can be marketed<br/>can be planted without restriction<br/>(wines without GI, ...)





Typicality

& terroir



Source : Ch. Schneider



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## Launching of regional programs in 2013 : key points

Resistance donators : Run1-Rpv1 Ren3-Rpv3 / Run1-Rpv1 Ren3.2-Rpv10 / Run1-Rpv1-Ren3-Rpv8 Geno
Vigne





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#### Anticipating tomorrow's grape varieties <u>`Absorption' crossings</u>

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approx. 100 000 seeds produced, 1 500 genotypes in stage 2

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#### Why choosing Cabernet franc and Petit Verdot?



Progeny of Cab franc, photo Claire Deschodt





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Marker assisted selection of the offsprings : Right parents ? QTLs of resistance ? Hermaphrodism ?





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Transfer in green house Trellising Removal of laterals





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# Maintenance during Stage 2



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Planting March 2018 Stage 2 INRA Approx 5 vines per candidate genotype



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#### What's next...?

**Pre-breeding** programs at EU and World Levels for PMDM

Introduction of additional resistances (ie black rot, ...)

Importation or/and seeking for **new sources of resistance** :......Pierce's Disease, GTD ?...

Large database (1500 candidate genotypes)

Mutualization (« recycling » or providing genotypes to small vineyards ?)



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Laurent Audeguin, Loïc Le Cunff

Wine industry facing new challenges as never ... (since 1863 : Phylloxera era)

Thanks for your attention !



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Photo Akbar Jahid, Afghanistan Sayed Salahuddin, Washington Post

