

Les ressources génétiques Vigne

Ce que peut nous apporter l'étude des espèces de *Vitis* ?



P. This

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What can we expect from the study of resistant grapes ?

1. The resistance is often in wild species



What can we expect from the study of resistant grapes ?

1. The resistance is often in wild species
2. And it can be transferred to cultivars

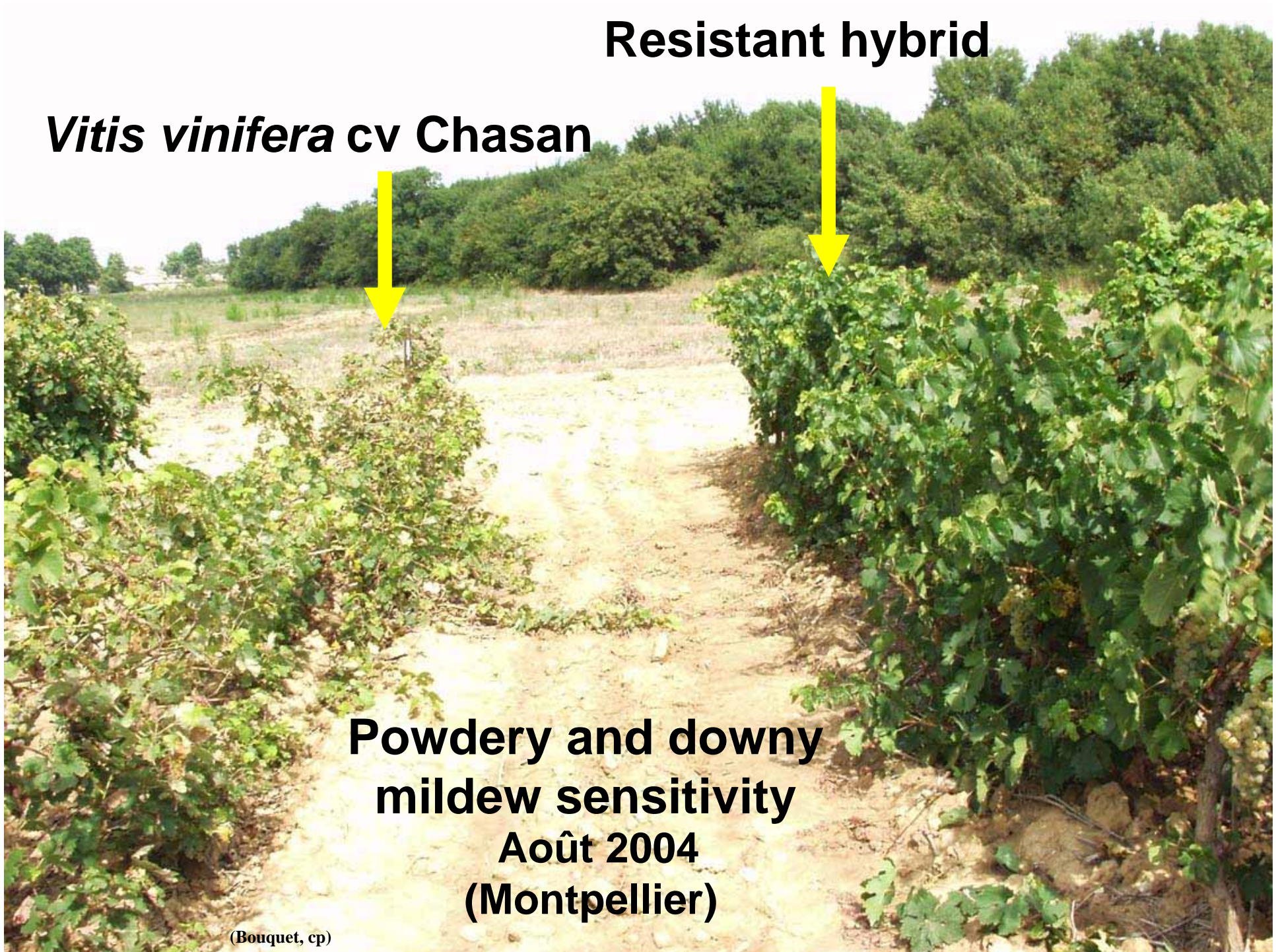
Resistant hybrid

***Vitis vinifera* cv Chasan**



**Powdery and downy
mildew sensitivity
Août 2004
(Montpellier)**

(Bouquet, cp)



What can we expect from the study of resistant grapes ?

1. The resistance is often in wild species
2. And it can be transferred to cultivars
3. But the process is quite long !



Initial cross:
70's

Introduction of powdery and downy mildews resistance



What can we expect from the study of resistant grapes ?

1. The resistance is often in wild species
2. And it can be transferred to cultivars
3. But the process is quite long !
4. And the road not straightforward !!



But the result is worth it !



Run1 -



Run1 +

Which resource to use ?



Introduction of resistance



1. The resistance must be strong

Level of resistance



Introduction of resistance



1. The resistance must be strong
2. Monogenic or polygenic ?



Introduction of resistance



1. The resistance must be strong
2. Monogenic or polygenic ?
3. From different origin/species



Introduction of resistance



1. The resistance must be strong
2. Monogenic or polygenic ?
3. From different origin/species
4. From as close a species as possible



Les vitacées dans le monde



Zones tempérées de l'hémisphère Nord

Vitis 60 esp.

Ampelopsis 31 esp.

Parthenocissus 18 esp.

Muscadinia 3 esp.



Zones tropicales et intertropicales



Cissus 367 esp.

Cyphostemma 258 esp.

Tetrastigma 132 esp.

Ampelocissus 90 esp.

Cayratia 65 esp.

Pterisanthes 21 esp.

Rhoicissus 11 esp.



Le Genre *Cissus*



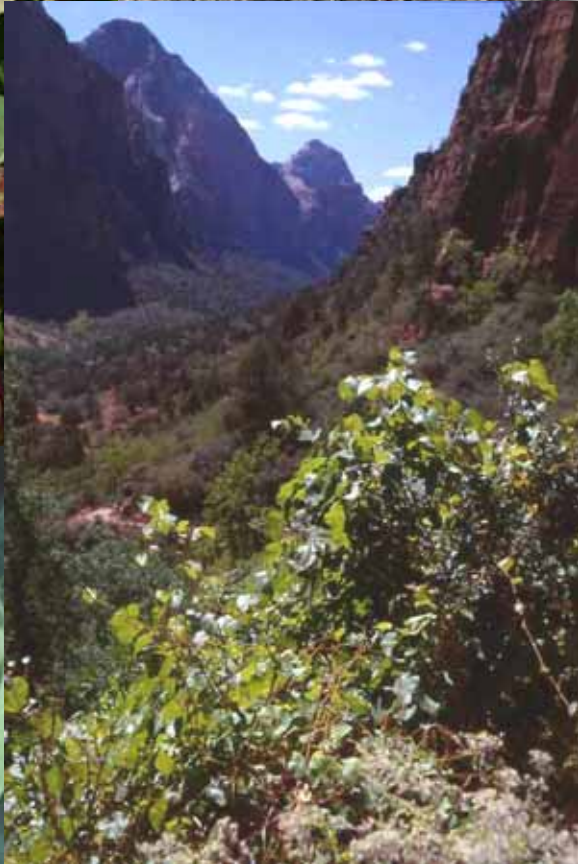
Le Genre *Cyphostemma*



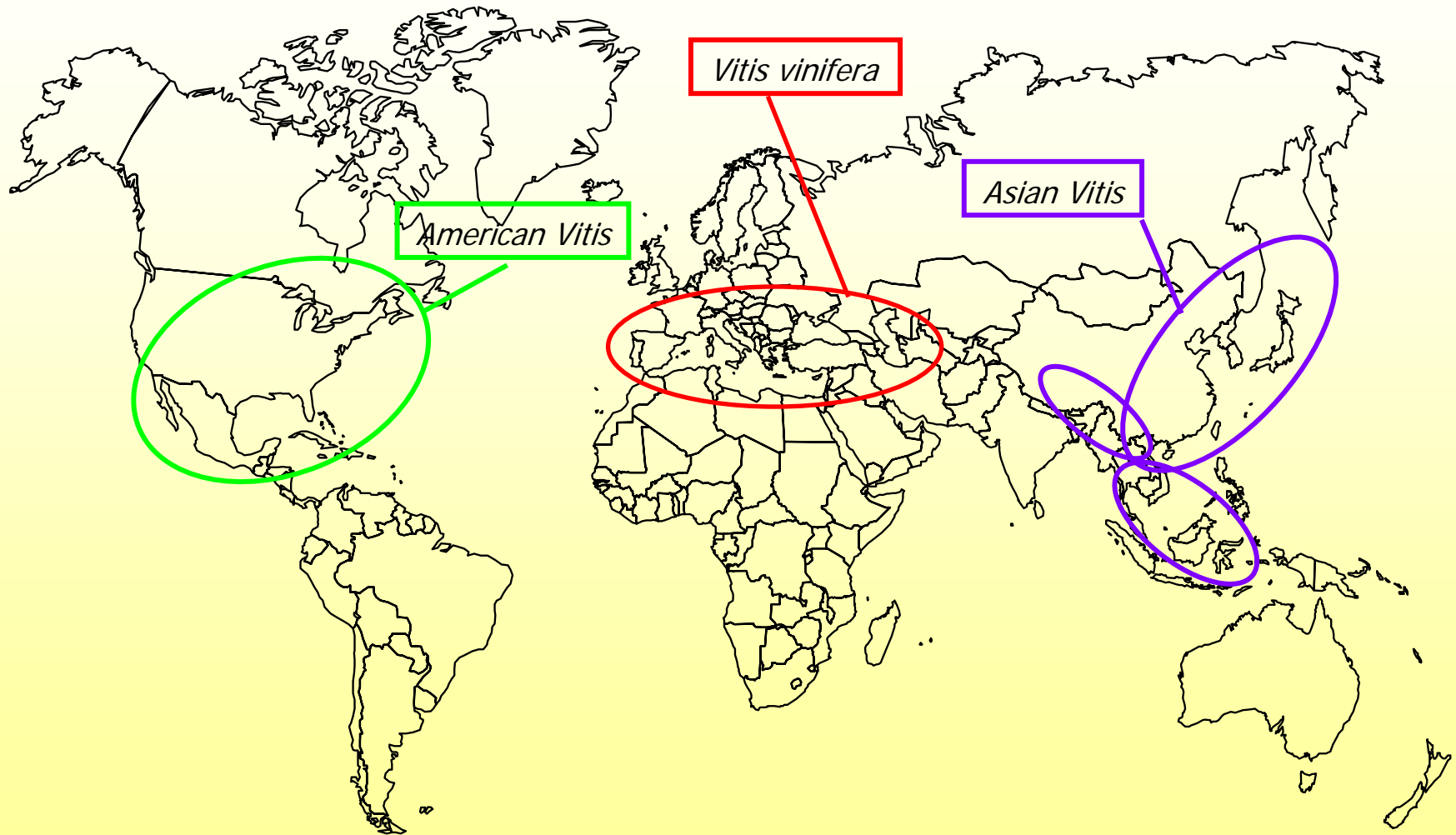
Le Genre *Tetrastigma*



The *Vitis* resources



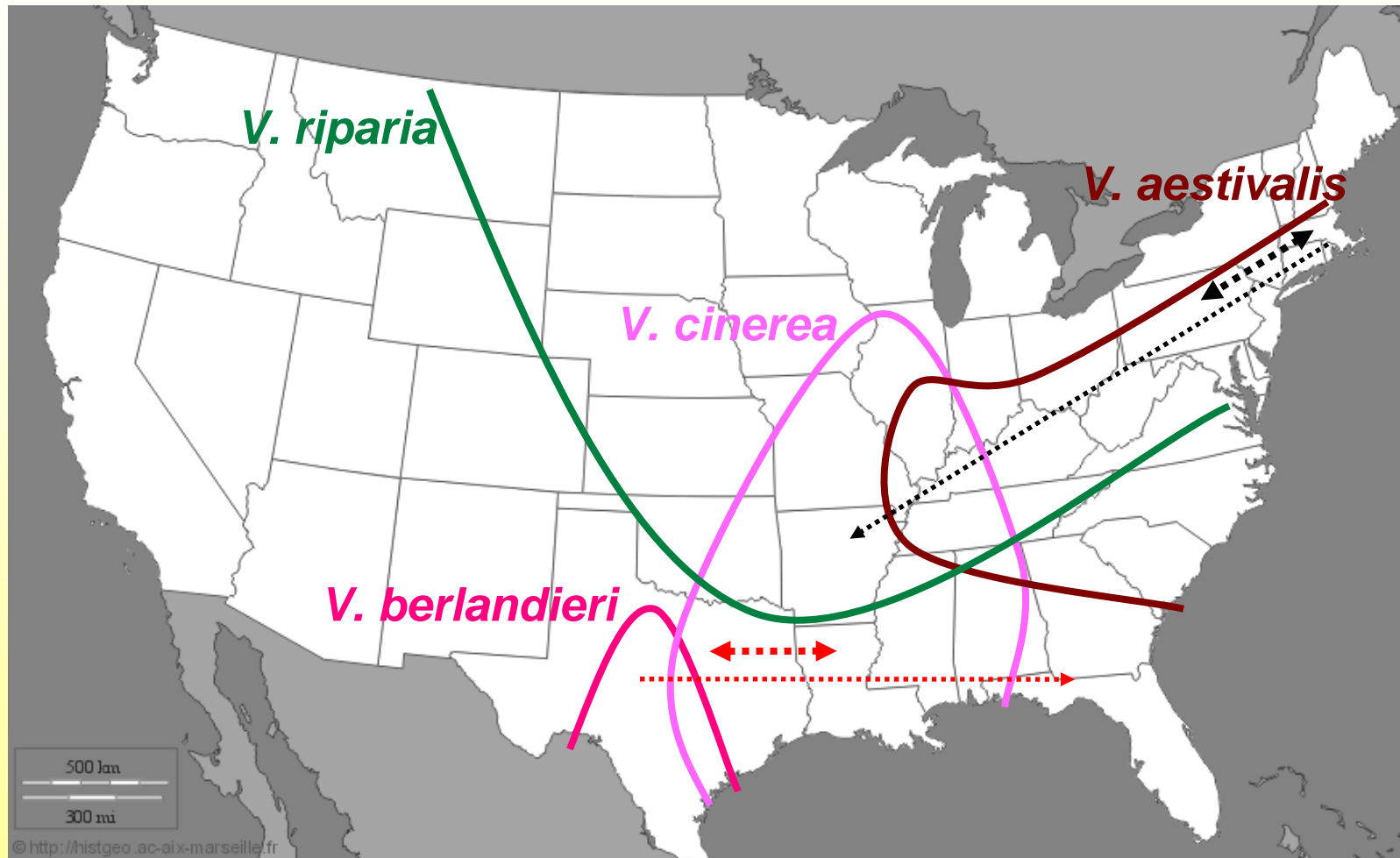
The geographical repartition



Their study

1. Prospections

Prospecting of American species within ANR “DL-Vitis” project



.....▶ **Transect JMB** ◀.....

.....▶ **Transect PT, JPP** ◀.....

Their study

1. **Prospection**
2. **The level of resistance**

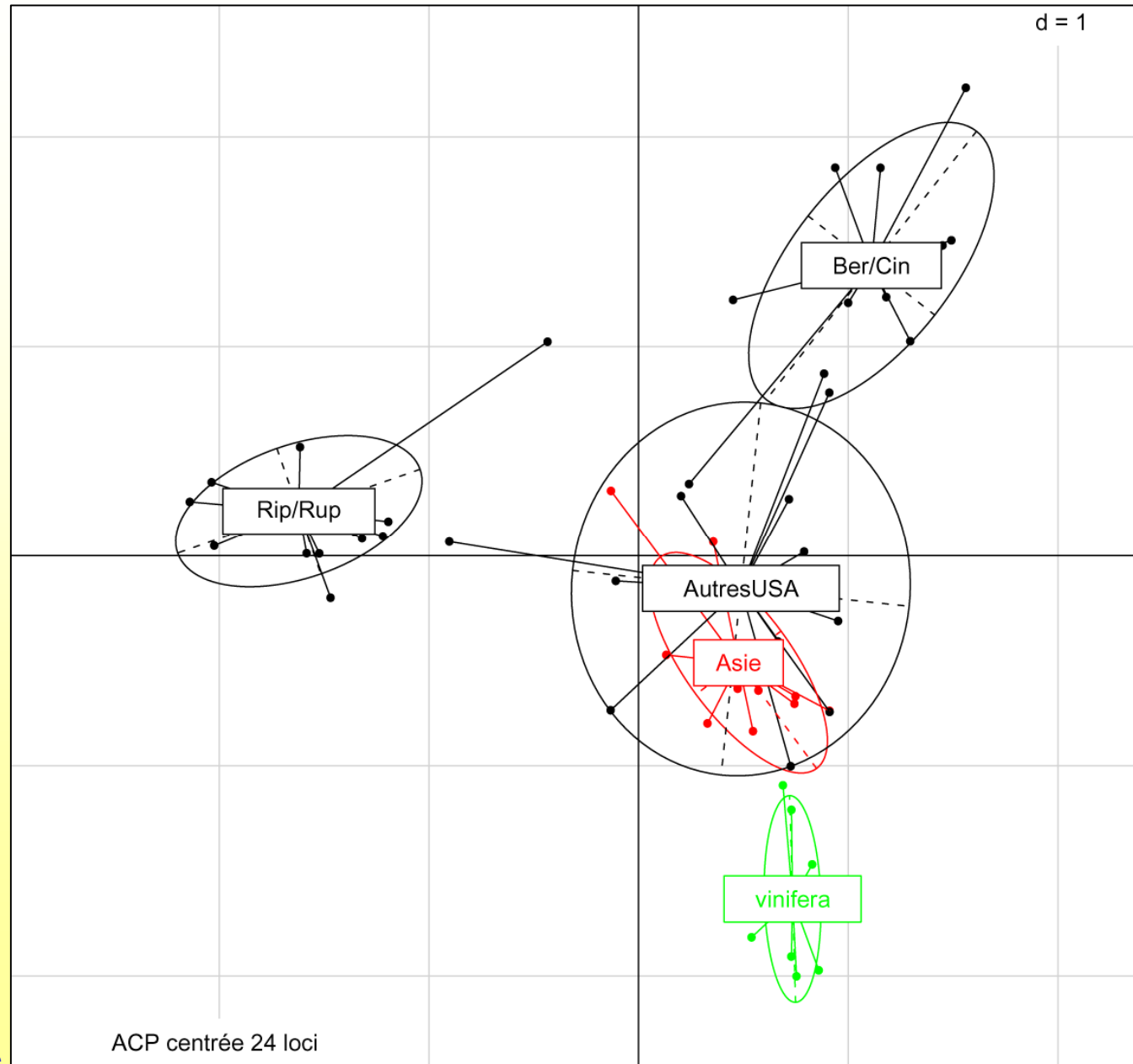
Level of resistance



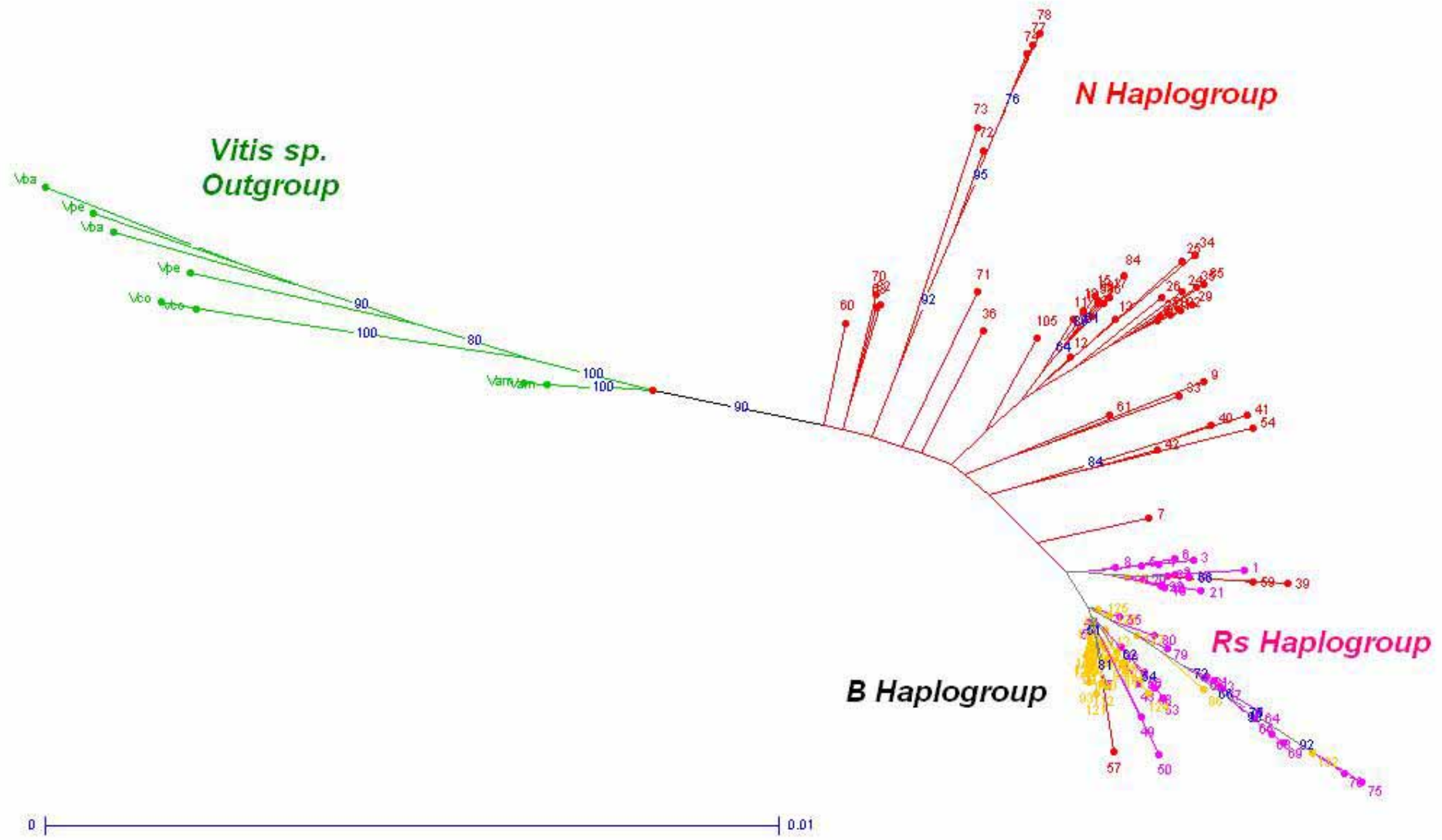
Their study

1. **Prospection**
2. **The level of resistance**
3. **Molecular diversity and phylogeny**

With SSR markers



With genes



Their study

- 1. Prospection**
- 2. The level of resistance**
- 3. Molecular diversity and phylogeny**
- 4. Genetic analyses of resistance**

ANR project DL-Vitis

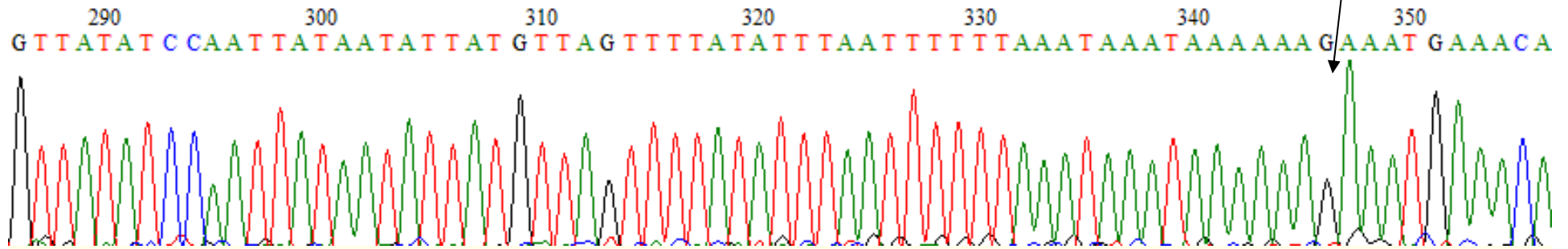
- **The uses of natural genetic resources for the analysis of resistance genetic determinism**
- **Association genetics for the testing of candidate genes**
- **Association genetics for QTL search = genome-scan methodology**

Their study

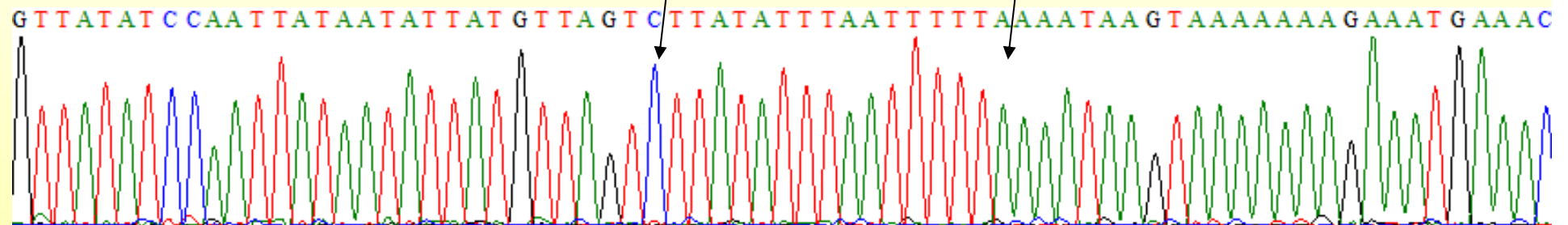
1. **Prospection**
2. **The level of resistance**
3. **Molecular diversity and phylogeny**
4. **Genetic analyses of resistance**
5. **Syntheny between genomes**

At the gene level (SNPGrpMap)

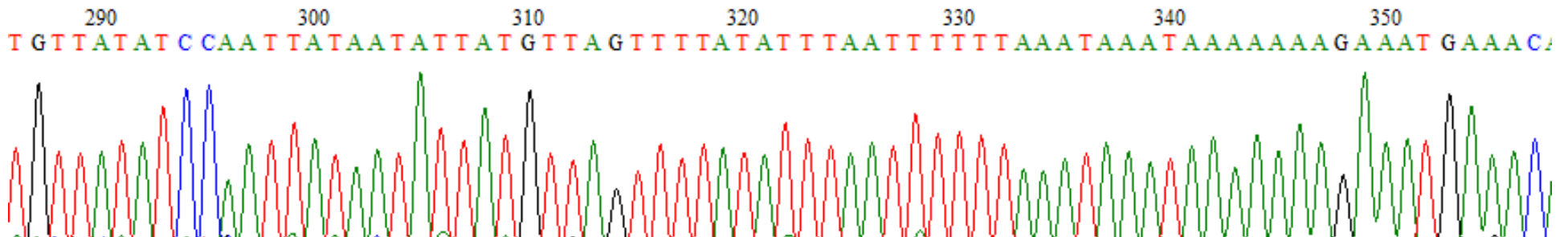
V. vinifera



V. pentagona



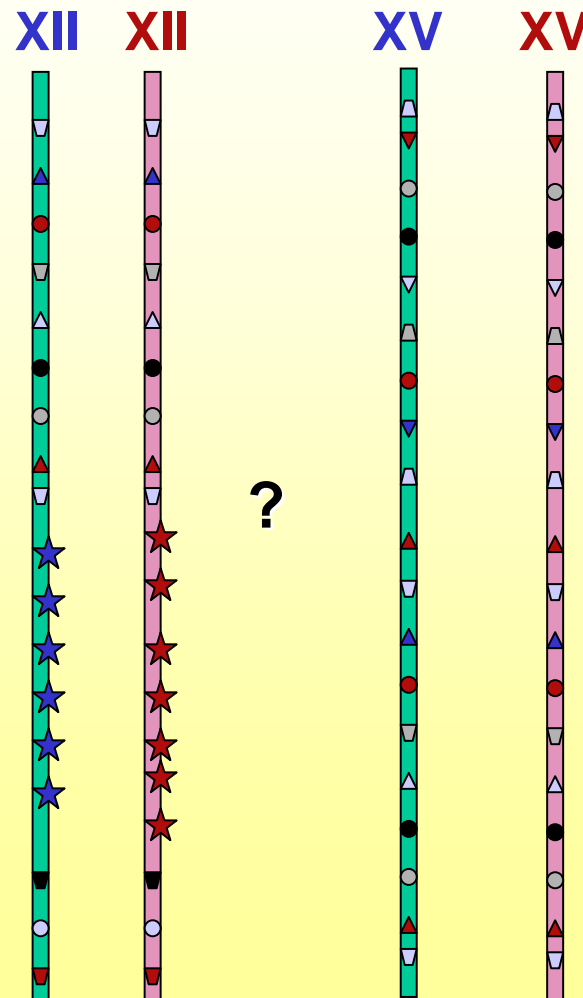
V. coignetiae



At the genome level

Comparison of regions or whole genome allows the comparison of synteny on large scale (project DL-Vitis, MuscaRes, GrapeReSeq)

Are the position of the genes on chromosomes conserved between species



And their conservation !

Accueil > La science et vous > Dossiers scientifiques > Biodiversité > Questions de recherche > Ressources génétiques et sélection > La collection de vignes de Vassal, conservatoire de biodiversité

Fiche de dossier de presse. 01/02/2005

La collection de vignes de Vassal, conservatoire de biodiversité



Depuis toujours, l'INRA maintient des collections de ressources génétiques, matériel régulièrement utilisé pour ses programmes de recherche et ceux de ses partenaires. Ces collections permettent de préserver une diversité façonnée par la nature et l'homme depuis des siècles. Elles permettent également de revenir à du matériel original par rapport aux standards du moment, pour répondre aux enjeux renouvelés de l'agriculture. Parmi les nombreuses collections végétales de l'INRA, la collection de vignes du Domaine de Vassal, près de Montpellier, est remarquable à plusieurs titres : son antériorité, sa taille et la qualité de caractérisation de son matériel végétal.



www.montpellier.inra.fr/vassal



Lien de la vigne : Génomique et amélioration de la vigne. Paris 13 mars 09

