



# **MONITORING, COLLECTION AND EVALUATION OF WILD VINE POPULATION IN CYPRUS**

**“Increasing the efficiency of conservation of *Vitis sylvestris*  
genetic resources in Europe” - *Sylvestris***

*Savvas Savvides*

Agricultural Research Institute - CYPRUS

*Kavala-Greece*

*09/10/2023*



# Monitoring, Collection and Evaluation of Wild Vine Population in Cyprus

The long-term objective of this project is to preserve and study in-situ and ex-situ populations of wild vines and to promote their future utilization

The project started in 2008

Participation in EU projects



- Management & Conservation of Grapevine Genetic Resources (2007- 2010)



- Cost Action FA1003- East-West Collaboration for Grapevine Diversity Exploration and Mobilization of Adaptive Traits for Breeding (2010 -2014)

There has been no previous research on wild vines in Cyprus.

Reports from botanist mentioning the existence of wild populations of Vitis not specifying if these are indigenous or subsponaneous plants.



# Monitoring, Collection and Evaluation of Wild Vine Population in Cyprus

## Aim of the project

### **Monitor**

- Monitoring the wild vine populations *in-situ*

### **Conservation of the genetic material**

- Protection *in-situ* from:
  - Human activities
  - Environmental disasters
  - Phylloxera invasion
- Establishment of Collections of wild vines *ex-situ*

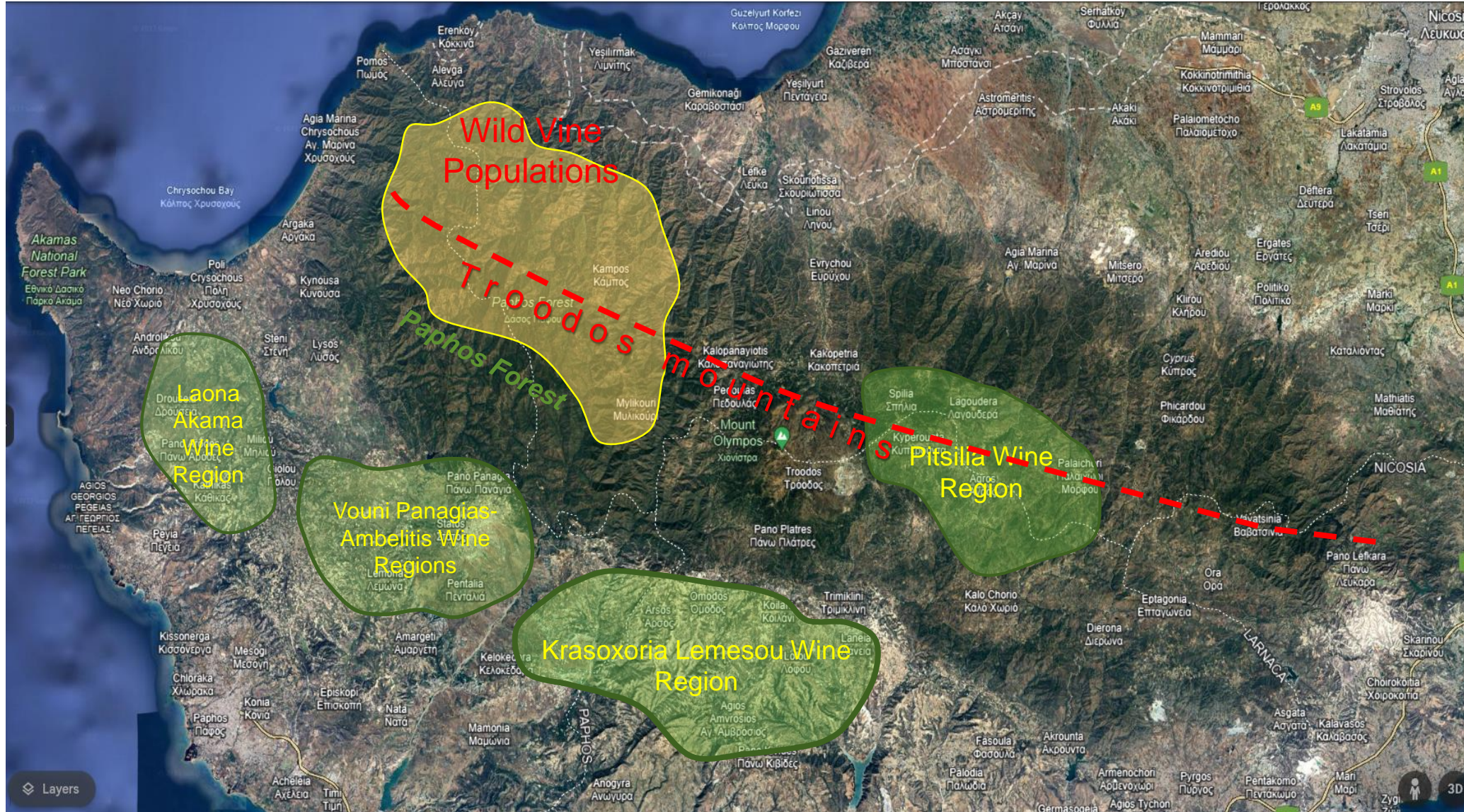
### **Utilization**

- Future use for vine improvement
  - Resistance to pests, (European grapevine moth *Lobesia botrana*) and diseases (Powdery and Downy mildew)
  - Resistance to environmental conditions (tolerance to biotic and abiotic stresses)
- Use as ornamental vines in gardening (Pergolas and hedges)
- Non *sylvestris* vines evaluated and used in viticulture for wine production.





# Monitoring Wild Vine Populations

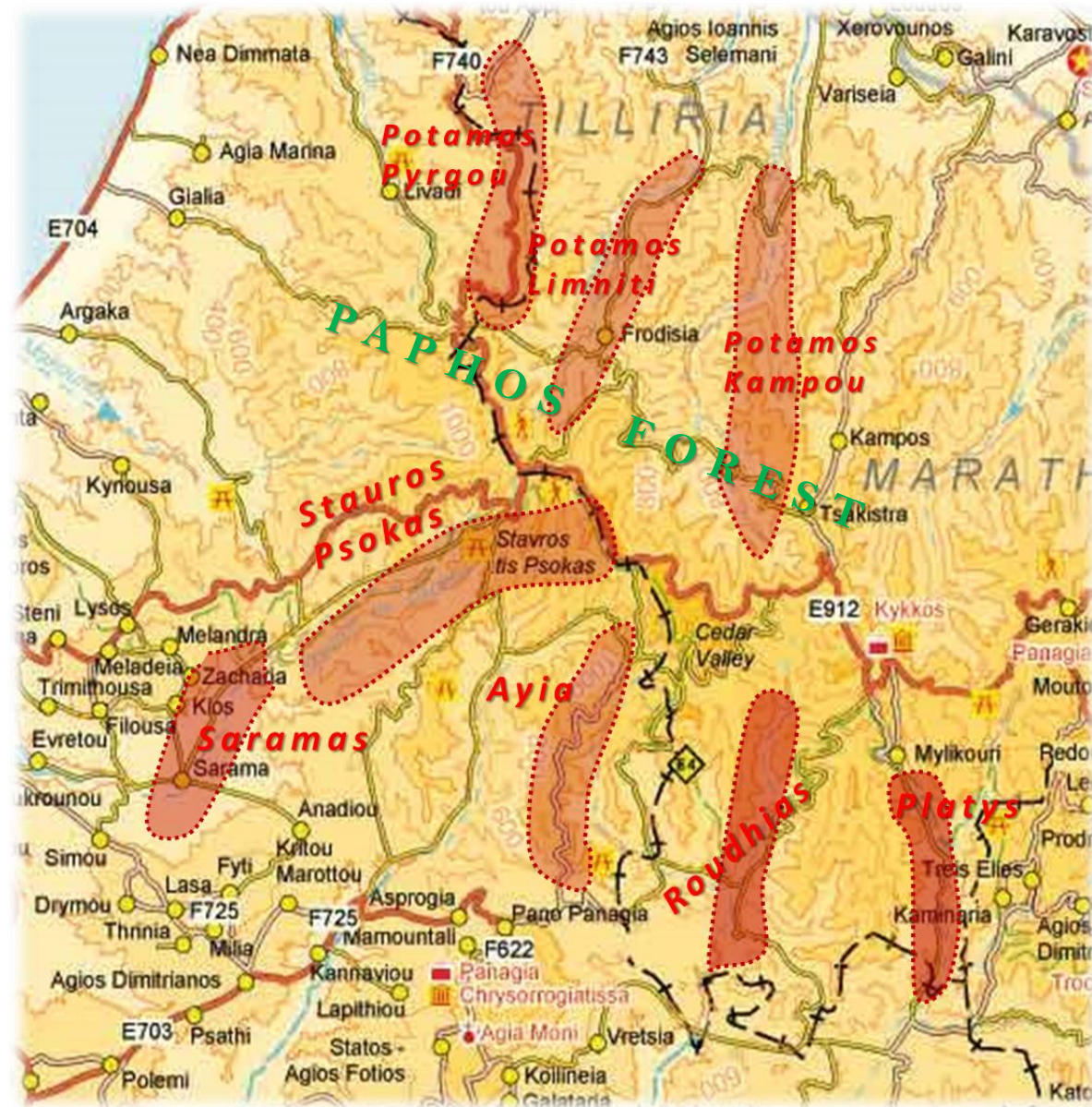




# Wild Vine Population Areas

Until now 323 individual wild vines have been marked and collected in river beds of 8 remote forest areas.

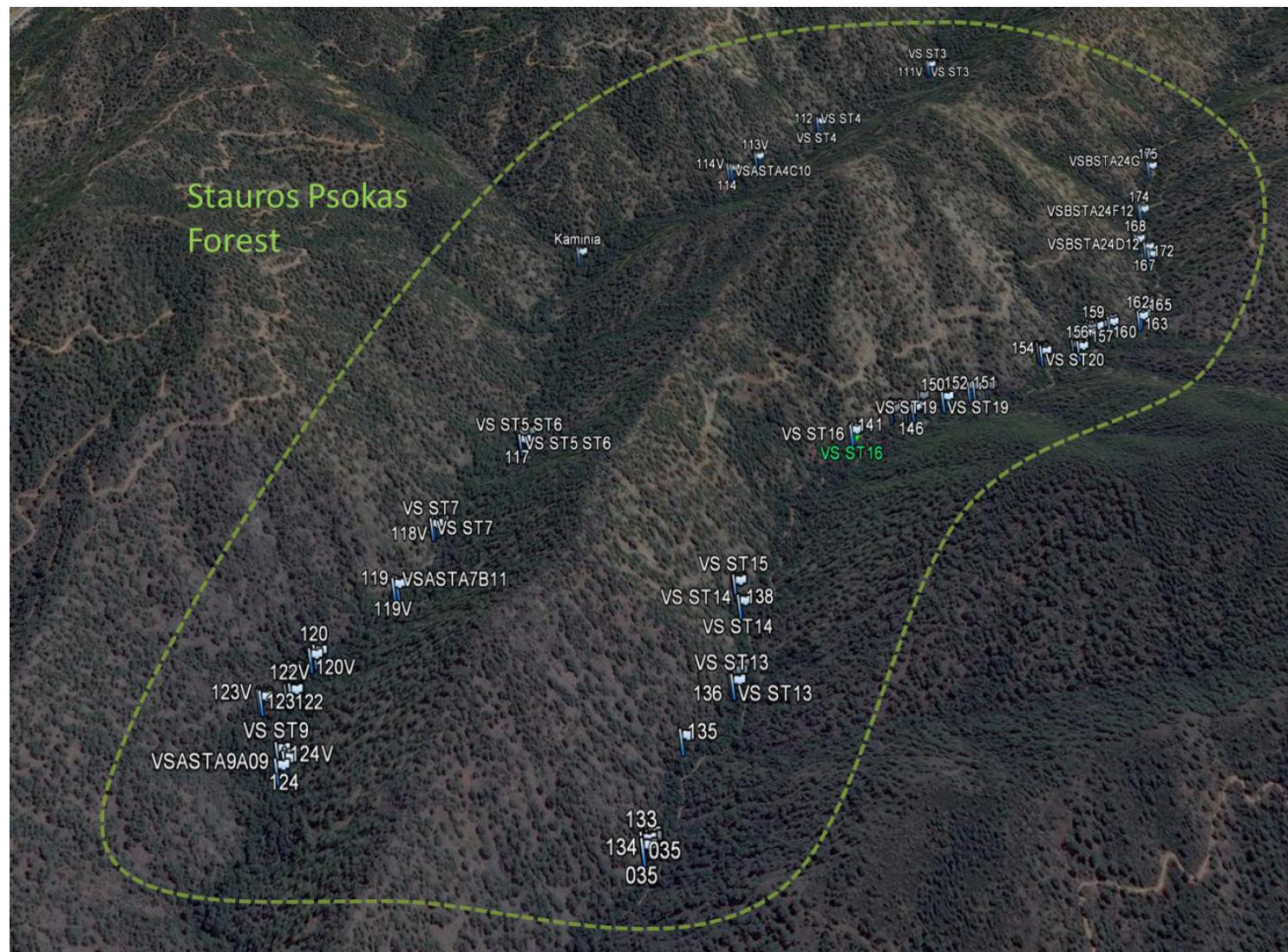
	Individuals <i>in-situ</i>	In Collections <i>ex-situ</i>	
Potamos Kampou	20	19	
Potamos Limniti	40	35	
Potamos Pyrgou	23	10	
Stauros Psokas	87	65	
Ayia	23	17	
Saramas	24	16	
Platys Poyamos	36	7	
Roudhias Potamos	42	13	
Other Areas	28	-	
<b>TOTAL 2023</b>	<b>323</b>	<b>182 (56%)</b>	





# Monitoring and Collection of Wild vines

WV: 1	
NEW Number/Code:	VSATIL1A08
OLD Number/Code:	VS1A
Collection No:	1A
GPS Bearing:	35.089358 32.759442
Elevation/Altitude (m):	415
Area:	Tilliria
Location:	Ayia Varvara
Description of Location:	Near the church
Plant climbing on:	Pine
Soil description:	
Height of vine (m):	9
Trunk size (circumference / cm):	12
Type of Flower (M / F / H):	H
Bunch present and description:	Small bunches
Berry Description (size, colour):	Small black





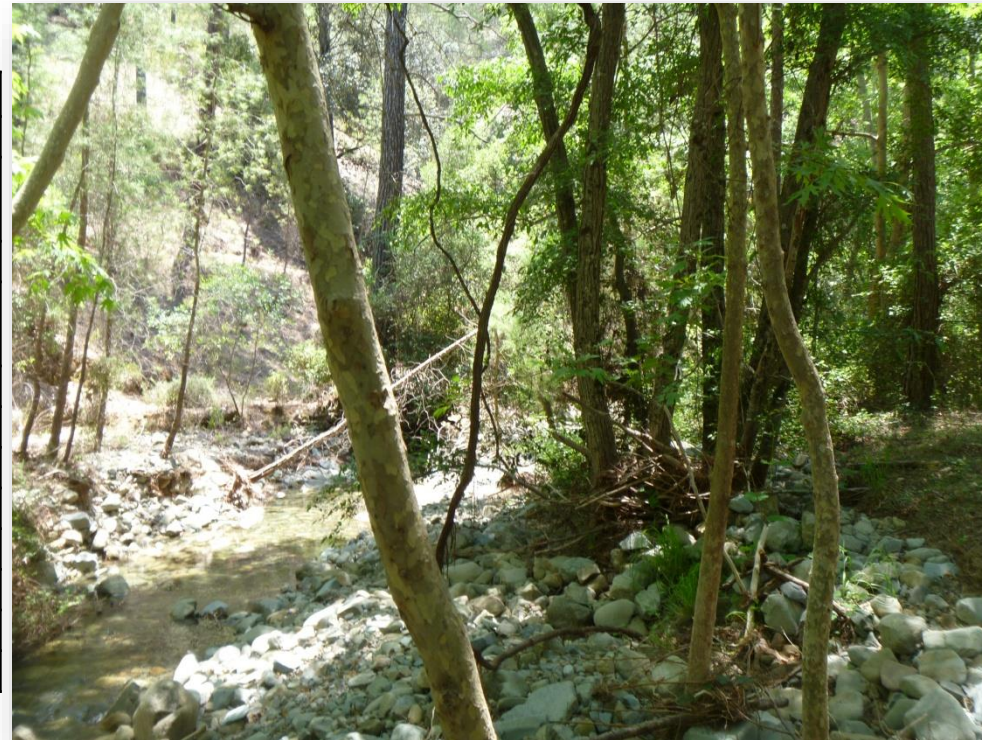
# Monitor and collection of wild vines

**Altitude:** 300-800m

**Located:** River beds and streams

Climb on trees and bushes (up to 12m)

Latin Name	Common Name
<i>Alnus orientalis</i> Decne	Oriental Alder
<i>Quercus coccifera</i> L.subsp <b>calliprinos</b> (Webb) Homboe	Kermes Oak, Holly Oak
<i>Quercus alnifolia</i> Poech	Golden Oak
<i>Quercus infectoria</i> Oliv. Subsp. <b>veneris</b> (A.Kern.) Meikle	Oak, Cyprus Oak
<i>Platanus orientalis</i> L.	Oriental Plane
<i>Acer obtusifolium</i> Sibth.et Sm	Maple
<i>Acer pseudoplatanus</i> L.	Sycamore
<i>Myrtus communis</i> L.	Common Myrtle
<i>Arbutus andrachne</i> L.	Eastern Strawberry Tree
<i>Styrax officinalis</i> L.	Storax
<i>Pinus brutia</i> Ten.	Calabrian Pine





# Collection of Wild Vines *ex-situ*

A collection of 182 individuals (56% of all individuals monitored) has been planted at Saittas Experimental Station for:

- Conservation of the genetic material and
- *ex-situ* evaluation





# Evaluation of wild vines *ex-situ*

## *Ex-situ* evaluation

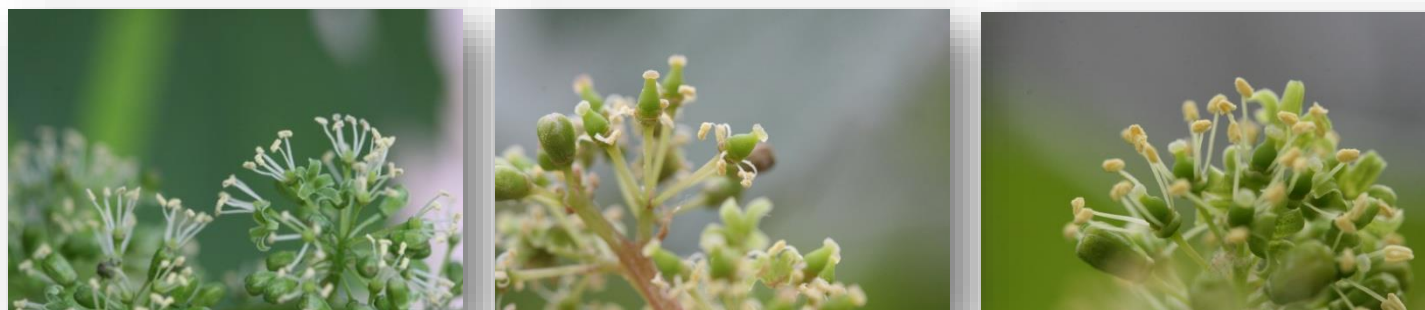
- **Phenotypical** characteristics
  - Ampelographic description using OIV descriptors (young shoots, type of inflorescence, mature leaves, bunches, berries and seeds)

Type of Inflorescence	Ind. Vines	%
Male	57	30
Female	51	27
Hermaphrodite	22	12
Not identified	60	32

Probably *V. Sylvestris*



- **Phenological** characteristics and stages
  - BBCH scale
  - Time of ripening
  - Juice analysis (Brix and Tartaric acid etc)





# SSR-marker analysis of Wild vines in collection

In collaboration with Julius Kühn-Institute (JKI) in Germany.  
( Dr. Erika Maul and Dr. Franco Röckel)



**Samples sent:** 190 samples (genotypes) of wild vines in collection (Saittas Exp. Station)

## Preliminary Results

- 93 genotypes are most likely true *sylvestris*
- 29 genotypes turned out to have Cypriote progenitors. None of them turned out to be progenitor of Cypriot *sylvestris* samples. So Cyprus represents a fairly closed genepool.
- 18 genotypes are also not considered as *sylvestris* because of too many rare alleles.





## Future plans

- Continue monitoring of Wild Vine populations in other areas.
- Addition of all genotypes in *ex-situ* collections for conservation.
- Continue the characterization and evaluation of *sylvestris* and *non sylvestris* genotypes for future use.







**THANK YOU**