

Lathyrus in Greece

Penelope Bebeli
Professor,
Plant Breeding Lab.

Ricos Thanopoulos
Farm Unit

Agricultural University
of Athens



Wild *Lathyrus* in Greece (32)

- *L. alpestris* (Waldst. & Kit.) Čelak.
- *L. amphicarpos* L.
- *L. annus* L.
- *L. aphaca* L.
- *L. articulatus* L.
- *L. aureus* (Steven) Brandza
- *L. blepharicarpus* Boiss.
- *L. cicera* L.

Dimopoulos et al. 2013
Vascular Plants of Greece

Wild *Lathyrus* in Greece

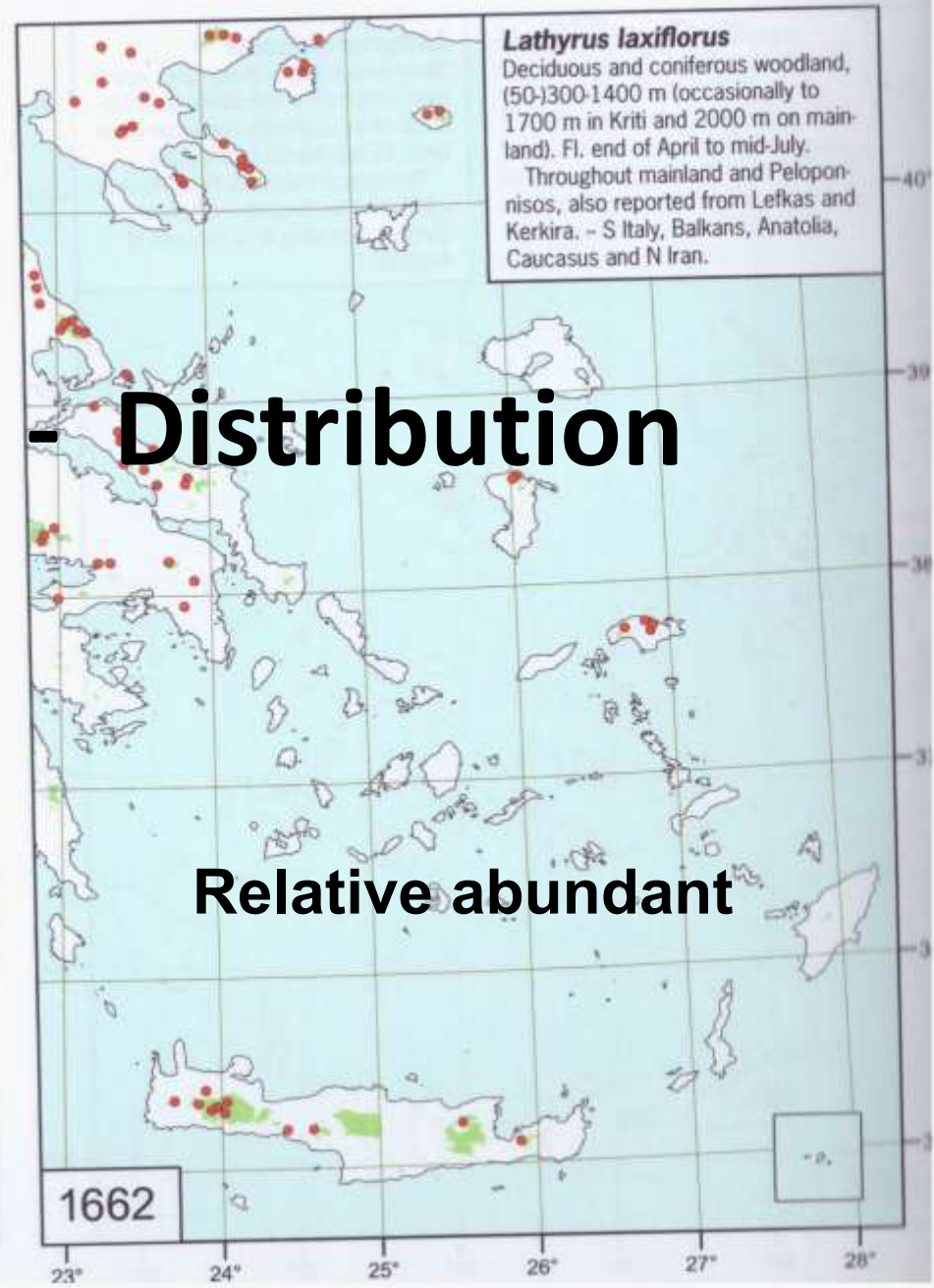
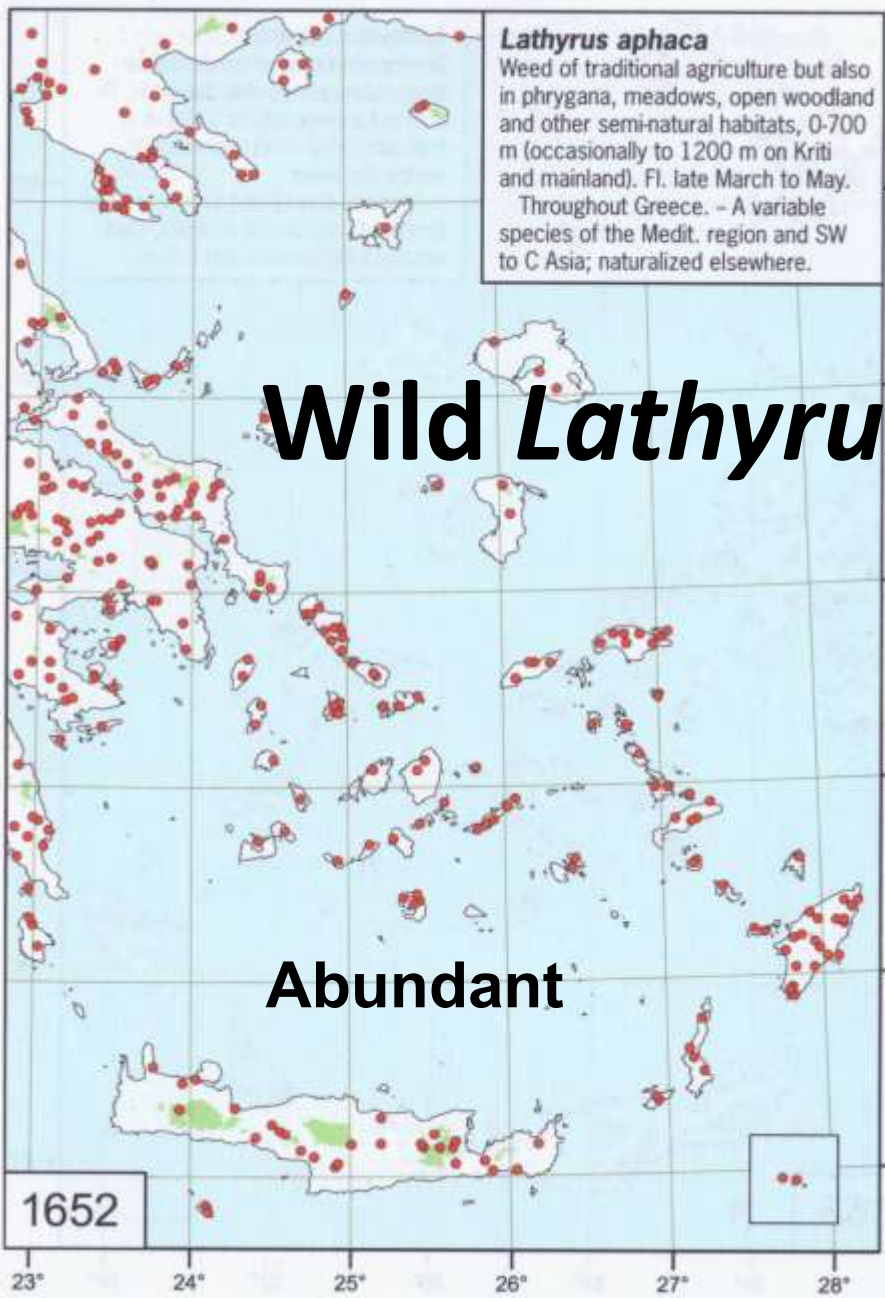
- *L. clymenum* L.
- *L. digitatus* (M. Bieb.) Fiori in Fiori & Paol.
- *L. gorgoni* Parl.
- *L. grandiflorus* Sm. in Sibth. & Sm.
- *L. hierosolymitanus* Boiss.
- *L. hirsitus* L.
- *L. inconspicuus* L.
- *L. latifolius* L.
 subsp. *heterophyllus* (L.) Asmussen

Wild *Lathyrus* in Greece

- *L. laxiflorus* (Desf.) Kunze
- *L. neurolobus* Boiss. & Heldr. In Boiss.
- *L. niger* (L.) Bern.
- *L. nisolia* L.
- *L. ochrus* (L.) DC. in Lam & DC.
- *L. pallescens* (M. Bieb.) K. Koch
- *L. pannonicus* (Jack.) Garke
- *L. pratensis* L.

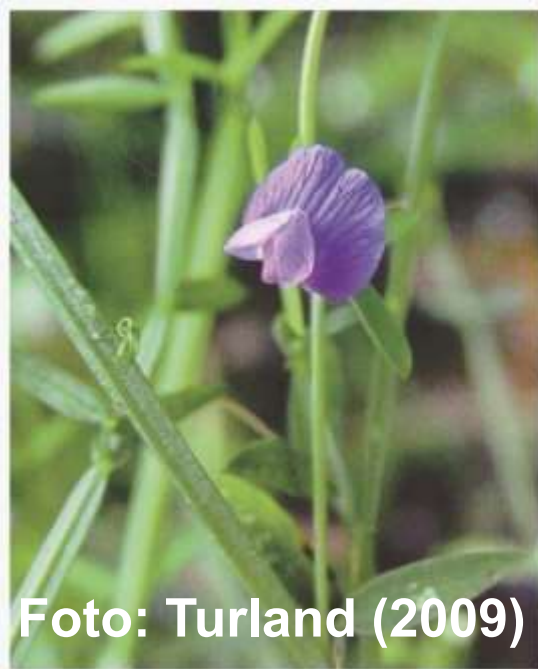
Wild *Lathyrus* in Greece

- (*L. sativus* L.)
- *L. saxatilis* (Vent.) Vis.
- *L. niger* (L.) Bern.
- *L. setifolius* L.
- *L. sphaericus* Retz.
- *L. sylvestris* L.
- *L. tuberosus* L.
- *L. venetus* (Mill.) Wohlf. in W.D.J. Koch



Wild *Lathyrus* - Distribution

Strid (2016)

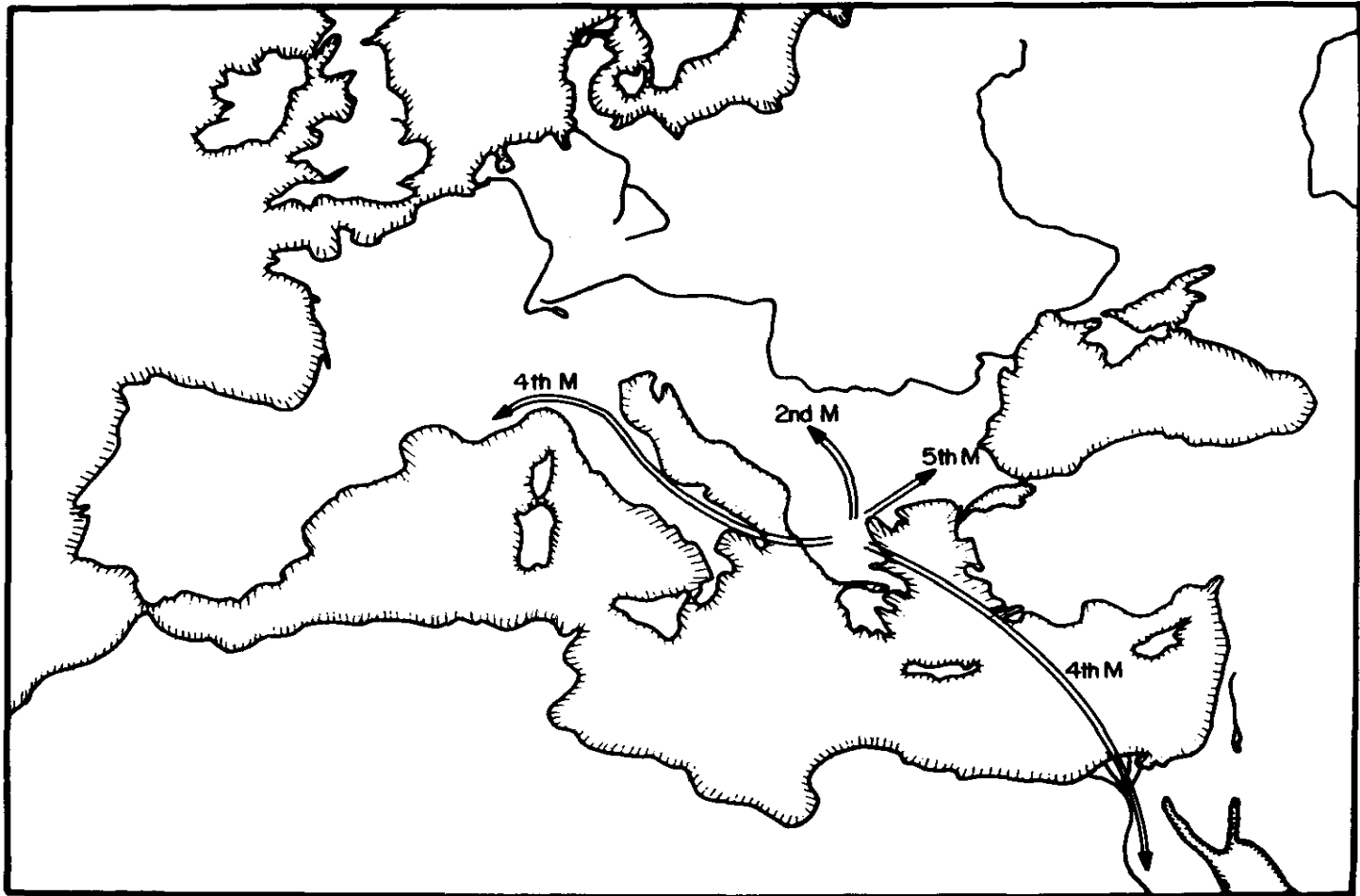


Strid (2016)

Cultivated *Lathyrus* in Greece

- *L. cicera* – for hay - considered as eroded
- *L. clymenum* – puree
- *L. ochrus* – puree and vegetable
- *L. sativus* – puree

Domestication, dissemination of *Lathyrus*



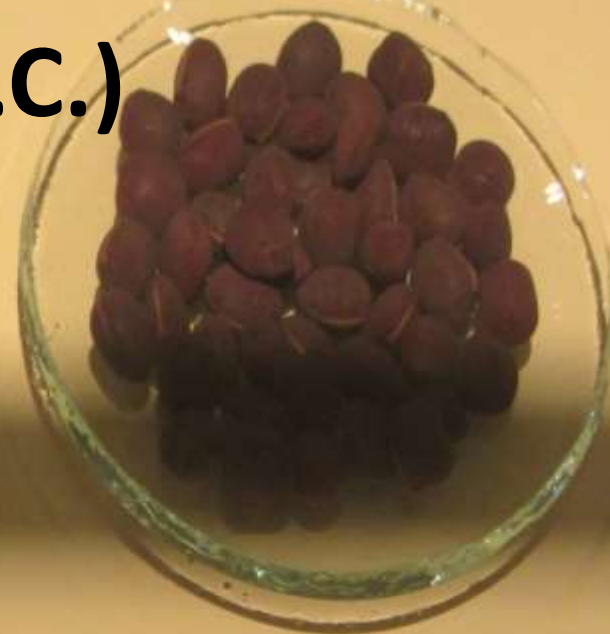
Kislev (1989) *Econ. Bot.* (43) 262–270.

Millet from Thera

Lathyrus clymenum in prehistoric Santorini (1613 B.C.)



Φάβα από τη Θήρα
Fava beans from Thera



Σύγχρονη φάβα
Modern fava beans

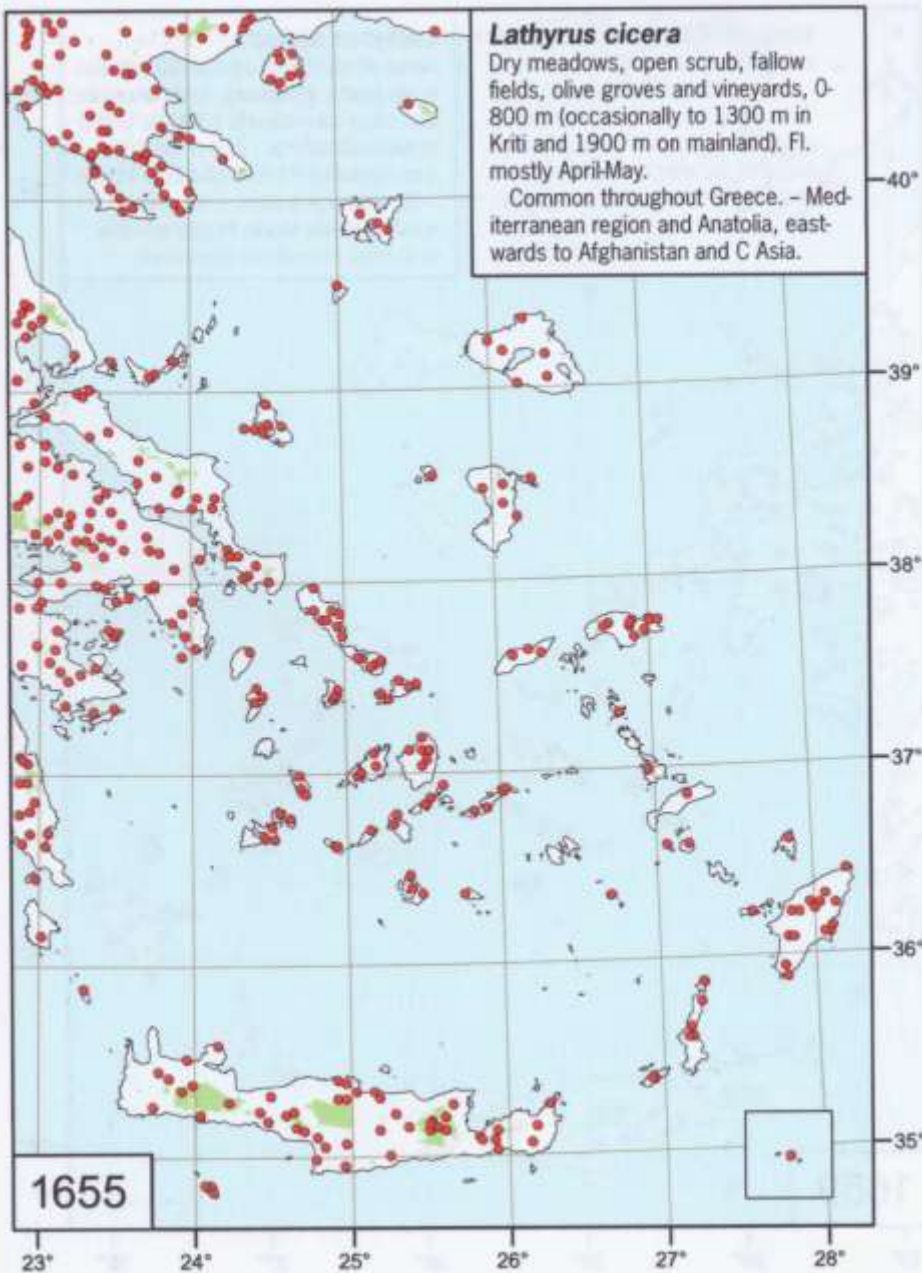
National Archeological Museum Athens

Presence of the Cyprus-vetch in Skyros

- Charred seeds - Palamari location - 2500–1800 B.C.)
(personal communication with Mr S. Mponatsos)
- Production in the island during 1825-26 (Thanopoulos 2012)
- Awarded at Salonika exhibition in 1932



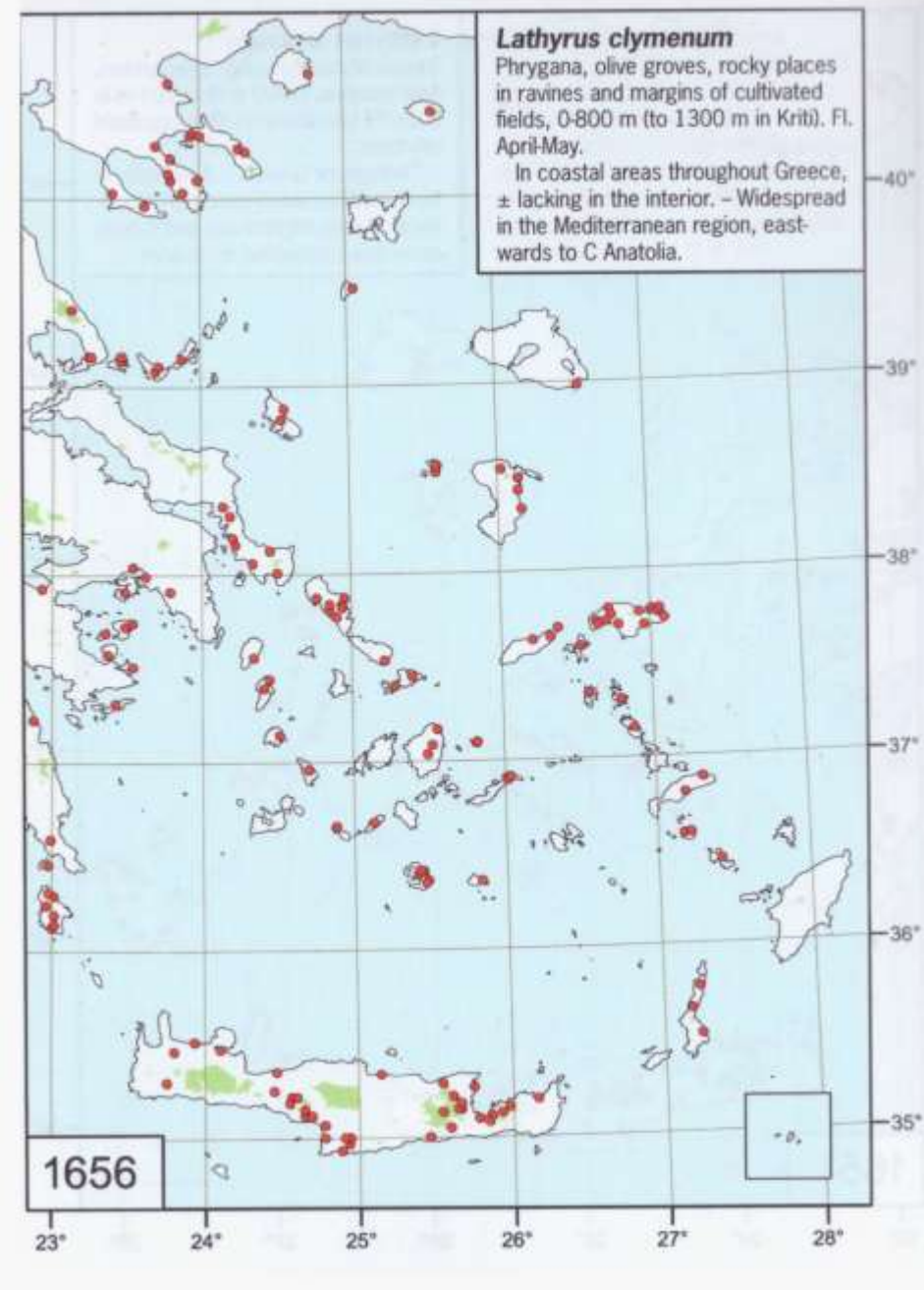
AUA collections



Strid (2016)



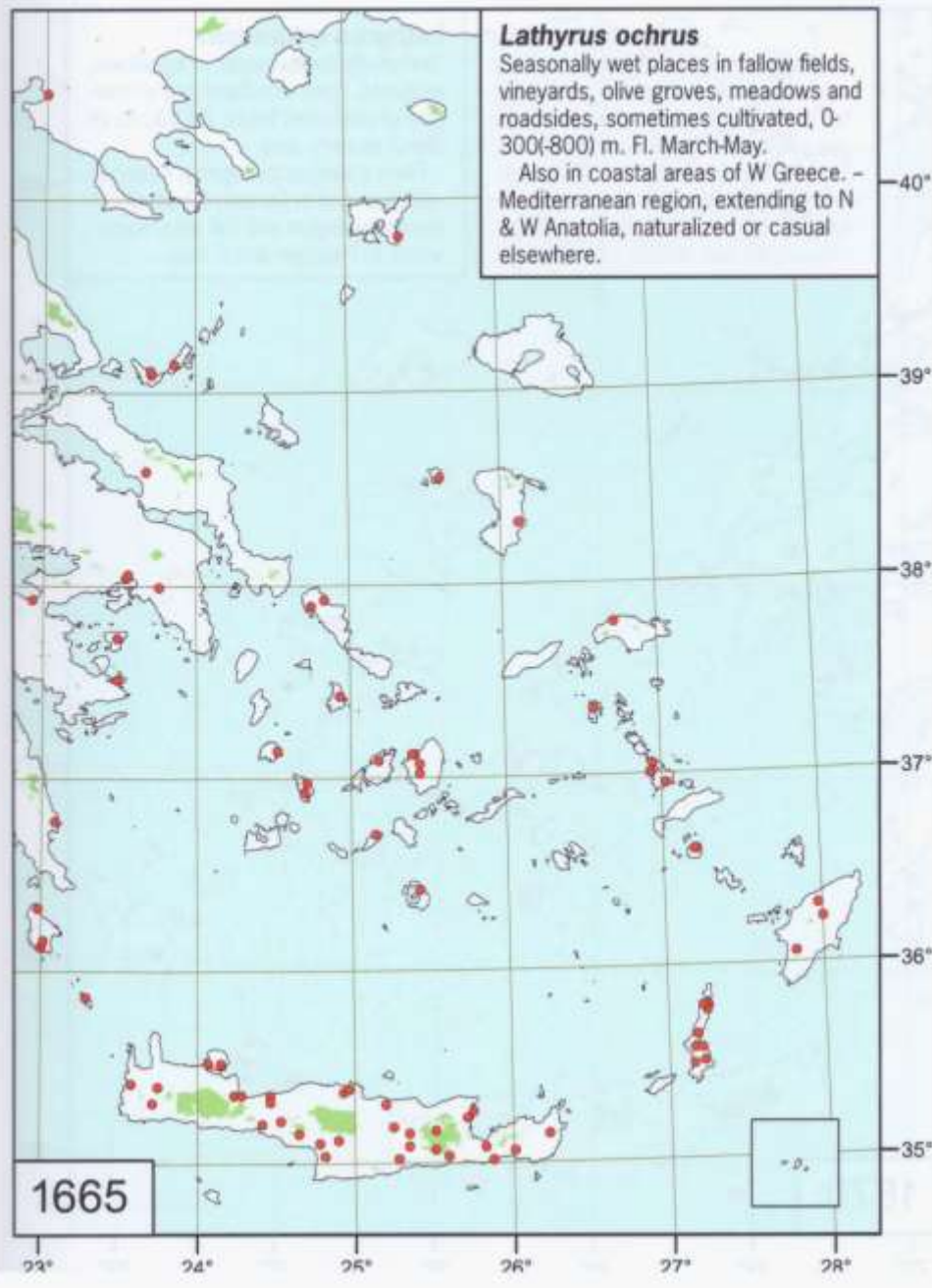
AUA collections



Strid (2016)



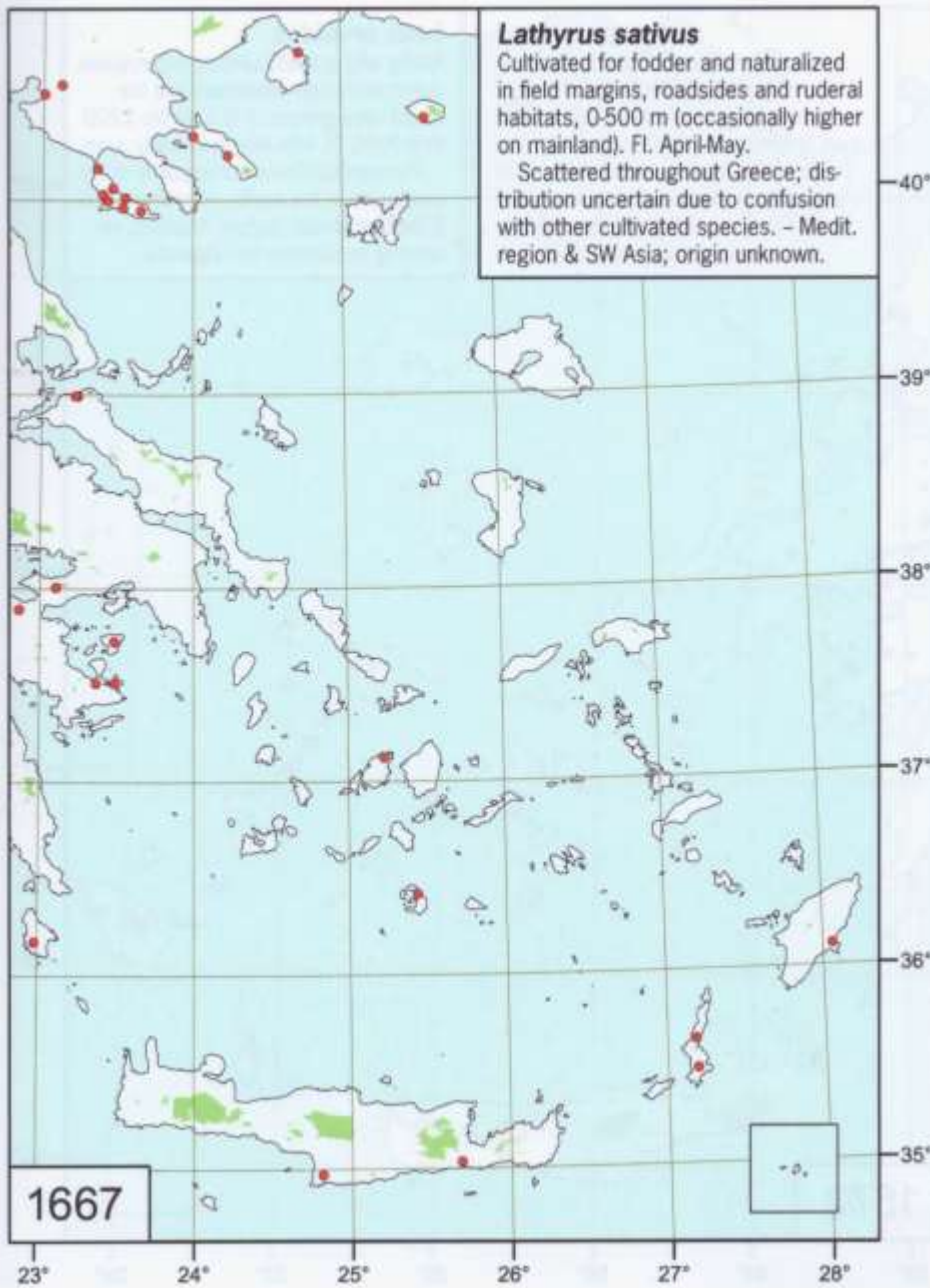
AUA collections



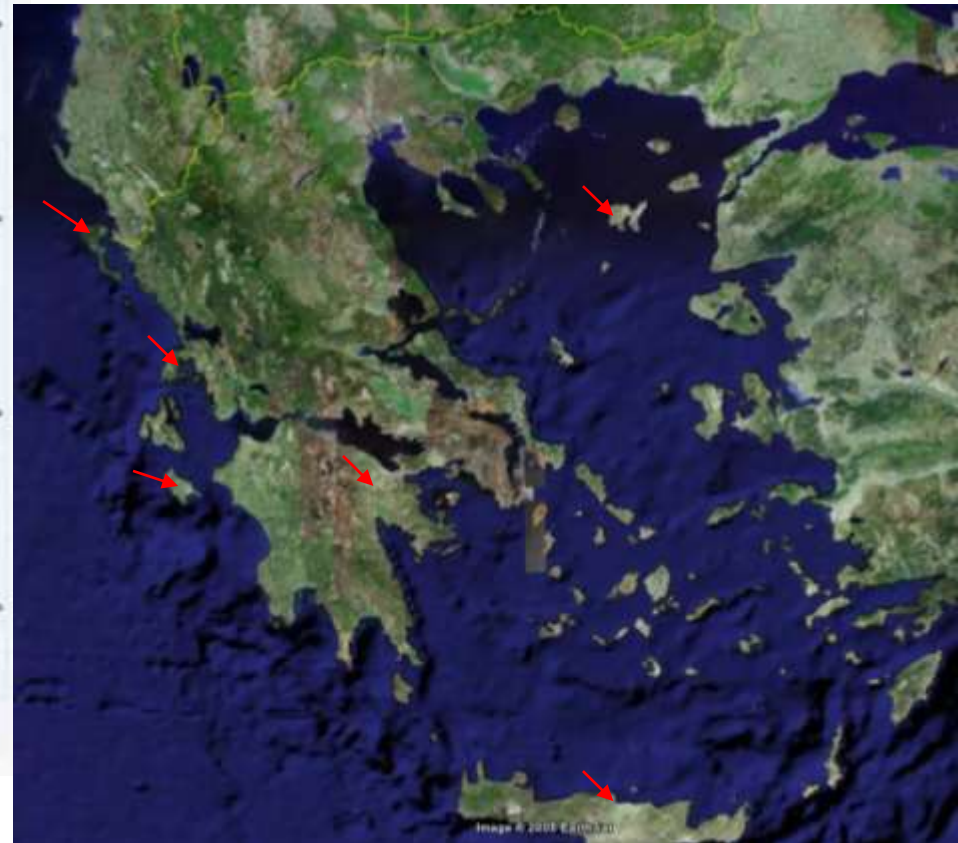
Strid (2016)



AUA collections



Strid (2016)

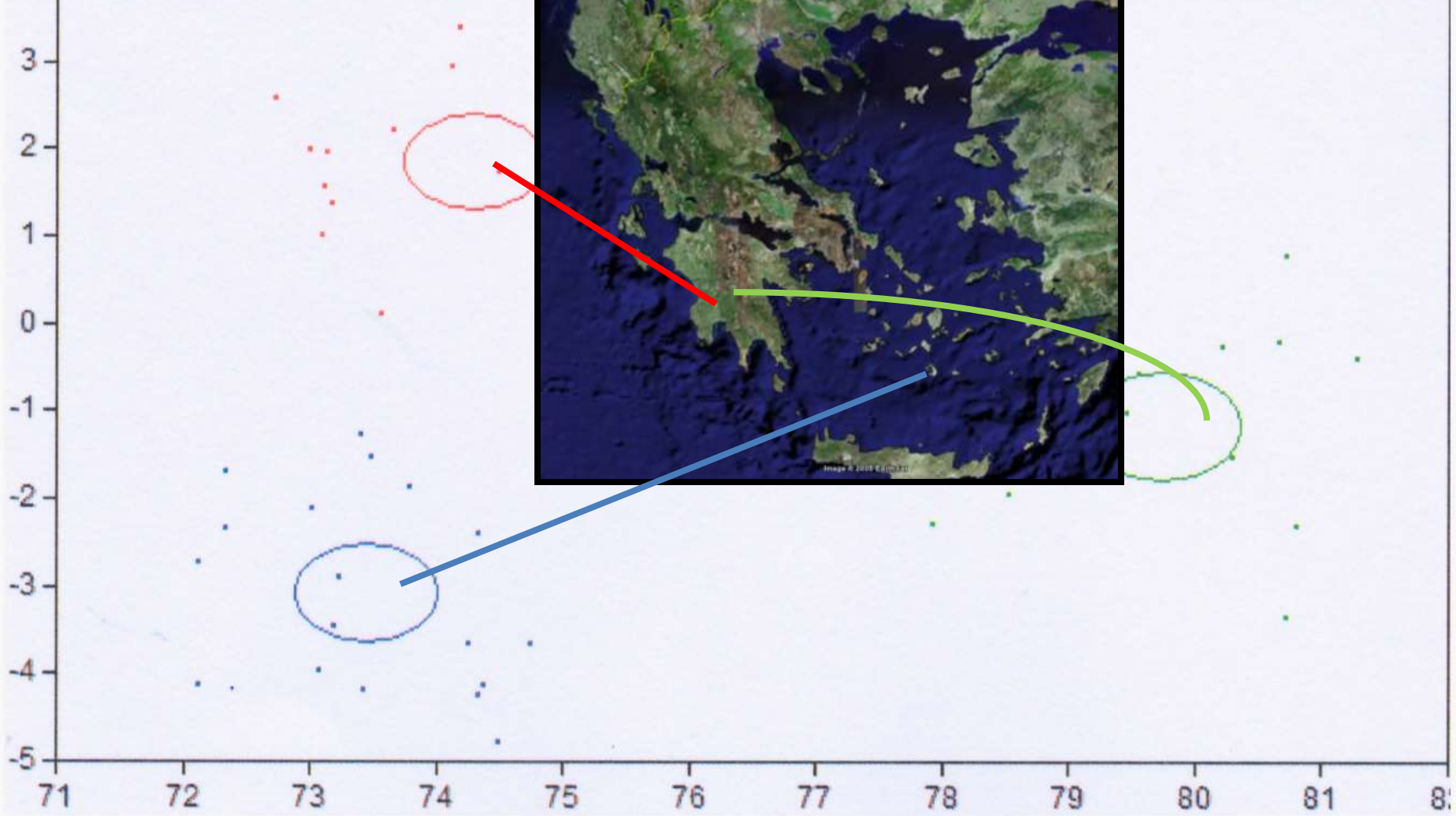


Characterization of three *Lathyrus* species populations (Mitsi 2013)

Populations of:

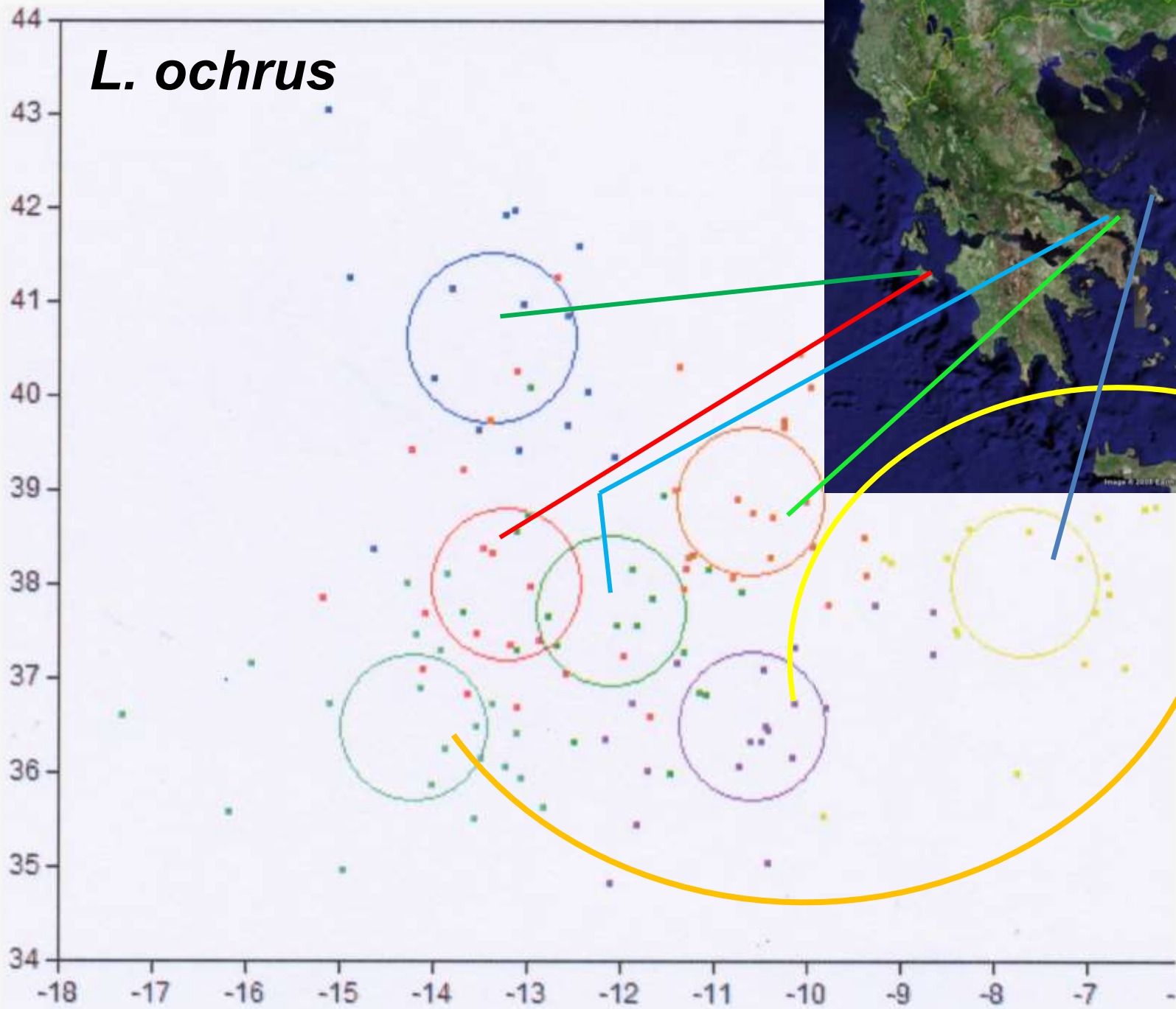
- *L. clymenum*
- *L. ochrus*
- *L. sativus*

Using 82 descriptors (IPGRI 2000)



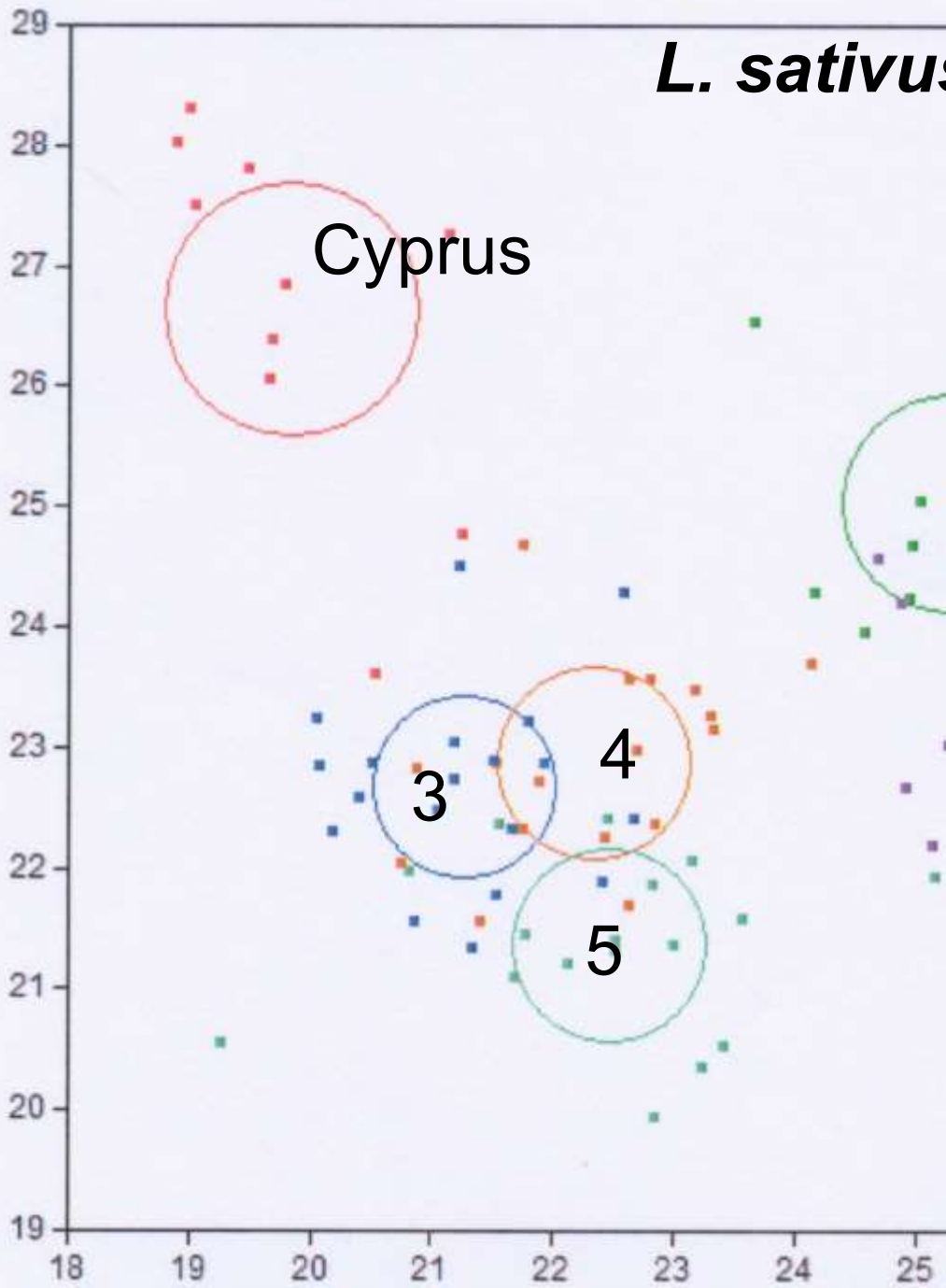
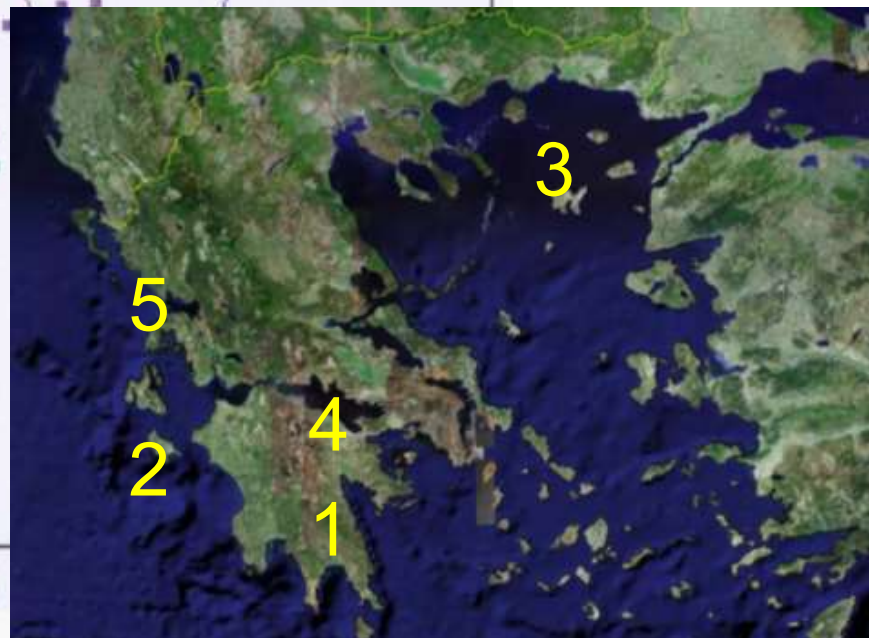
L. clymenum

L. ochrus



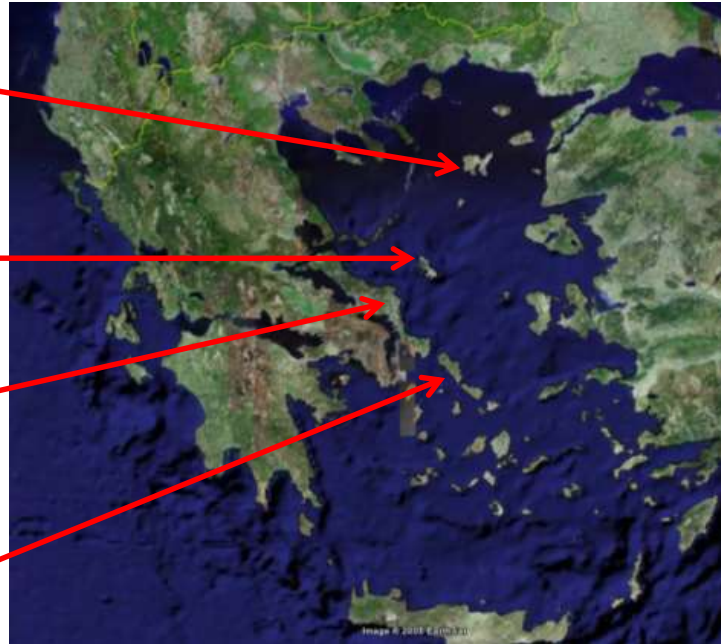
L. sativus

Cyprus



Characterization of four *L. ochrus* populations (Rovithi 2019)

- Limnos
- Skyros
- Evvoia
- Andros

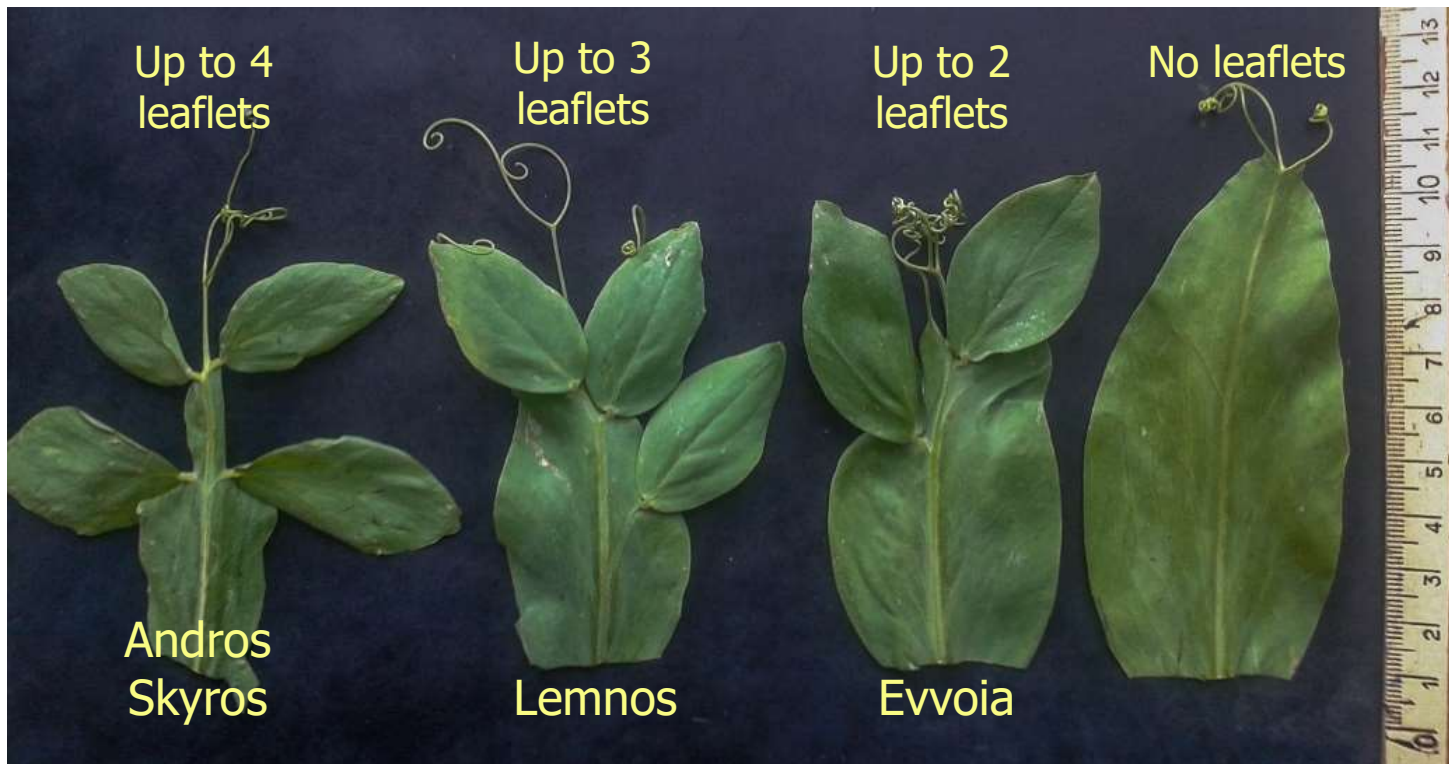


72 descriptors

Phenotypic characterization of the local populations

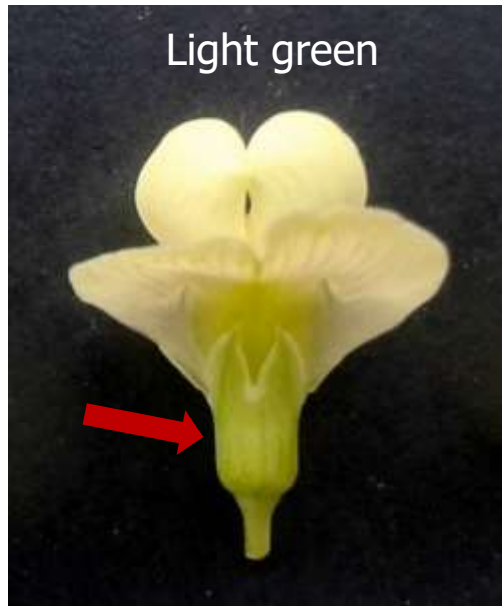
Descriptors for *Lathyrus* spp. (IPGRI, 2000)

- Differences occurred in vegetative and reproductive traits

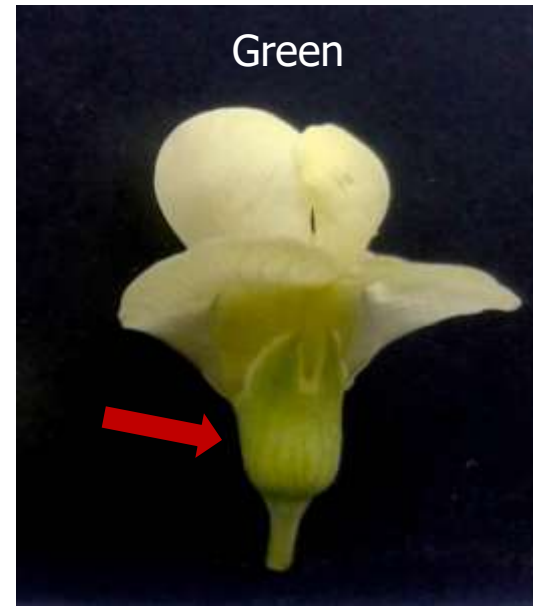


Inflorescence characters

- Flower calyx colour



Andros 100%
Lemnos 100%



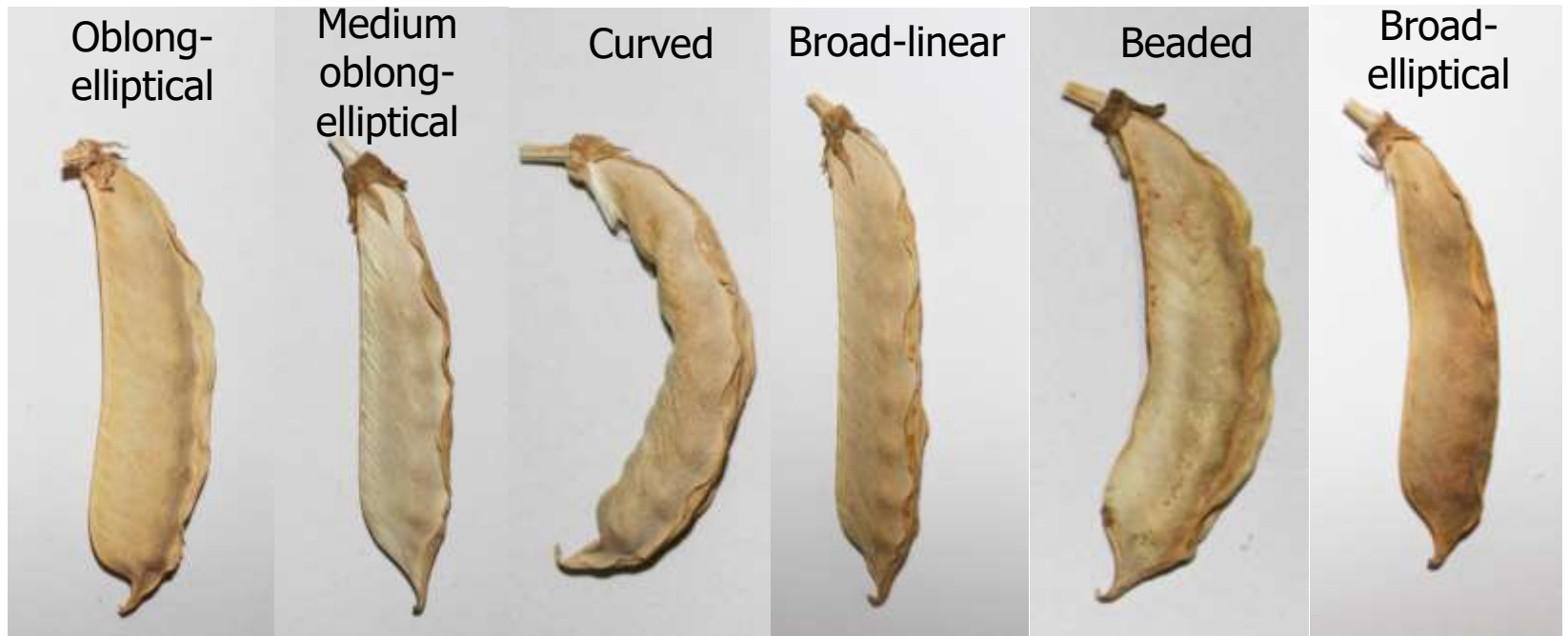
Skiros 92%
Evoia 70%

- Flowering time

Skiros < Andros, Lemnos < Evvoia

Pod traits

- Shape, curvature, constriction of pods between the seeds



| | Oblong-elliptical | Medium oblong-elliptical | Curved | Broad-linear | Beaded | Broad-elliptical |
|--------|-------------------|--------------------------|--------|--------------|--------|------------------|
| Skiros | 63% | 1% | 15% | 8% | 5% | 8% |
| Andros | 10% | 65% | 11% | 8% | 2% | 4% |
| Lemnos | 71% | 3% | 21% | - | 5% | - |
| Evoia | 37% | 24% | 26% | 9% | - | 4% |

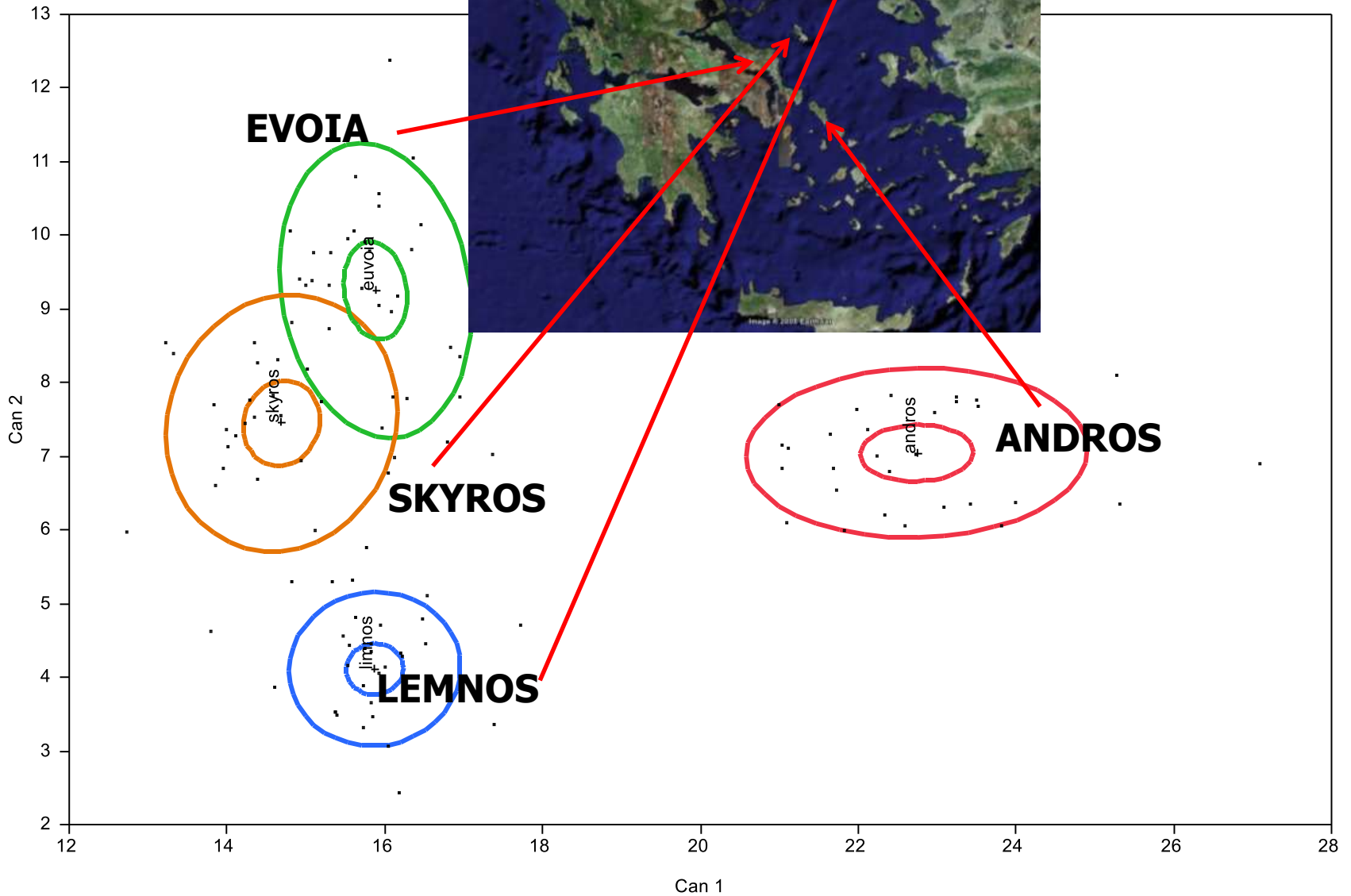
► Differentiation of populations

- Flowering time: Skyros < Andros, Limnos < Evvoia



| | POZ | ΚΡΕΜ | ΚΙΤΡΙΝΟ ΠΡΑΣΙΝΟ | ΠΡΑΣΙΝΟ | ΓΚΡΙ |
|--------|-----|------|--------------------|---------|------|
| Skyros | 19% | 15% | 60% | 6% | - |
| Andros | 23% | 8% | 53% | - | 16% |
| Limnos | 6% | 7% | 53% | 24% | 9% |
| Evvoia | 15% | 7% | 47% | 23% | 8% |

Discrimination of the populations



Landrace Conservation *in situ*

On-farm conservation

Collaboration with farmers of Skyros and Limnos for the conservation of their landrace



Fava Santorinis
(P.D.O.)
Lathyrus clymenum
Landrace known as
"arakas"



Fava Feneou
(P.G.I.)
Lathyrus sativus



Fava Skirou
Lathyrus ochrus
Landrace known
as "pises"



Conclusions

- Greece still retains on farm a sufficient wealth of *Lathyrus* landraces and populations
- Nevertheless the situation is alarming due to genetic erosion (*L. cicera*)
- The economic utilization of landraces for quality products is a challenge in order to retain large *Lathyrus* genetic pools in situ

Thank you Muḷumesc



thrashing of
L. ochrus in Skyros