

UNIVERSITY OF BELGRADE FACULTY OF AGRICULTURE

Annual legumes for pastures
- Central Balkan view -

Savo Vučković
Aleksandar Simić

Annual legumes and pastures



- Naturalized ecotypes of annual pasture legumes have been sources of well-adapted commercial cultivars
- Annual legumes represent one of the most significant crops in the global agriculture today, with a prominent place in both animal nutrition and animal feeding

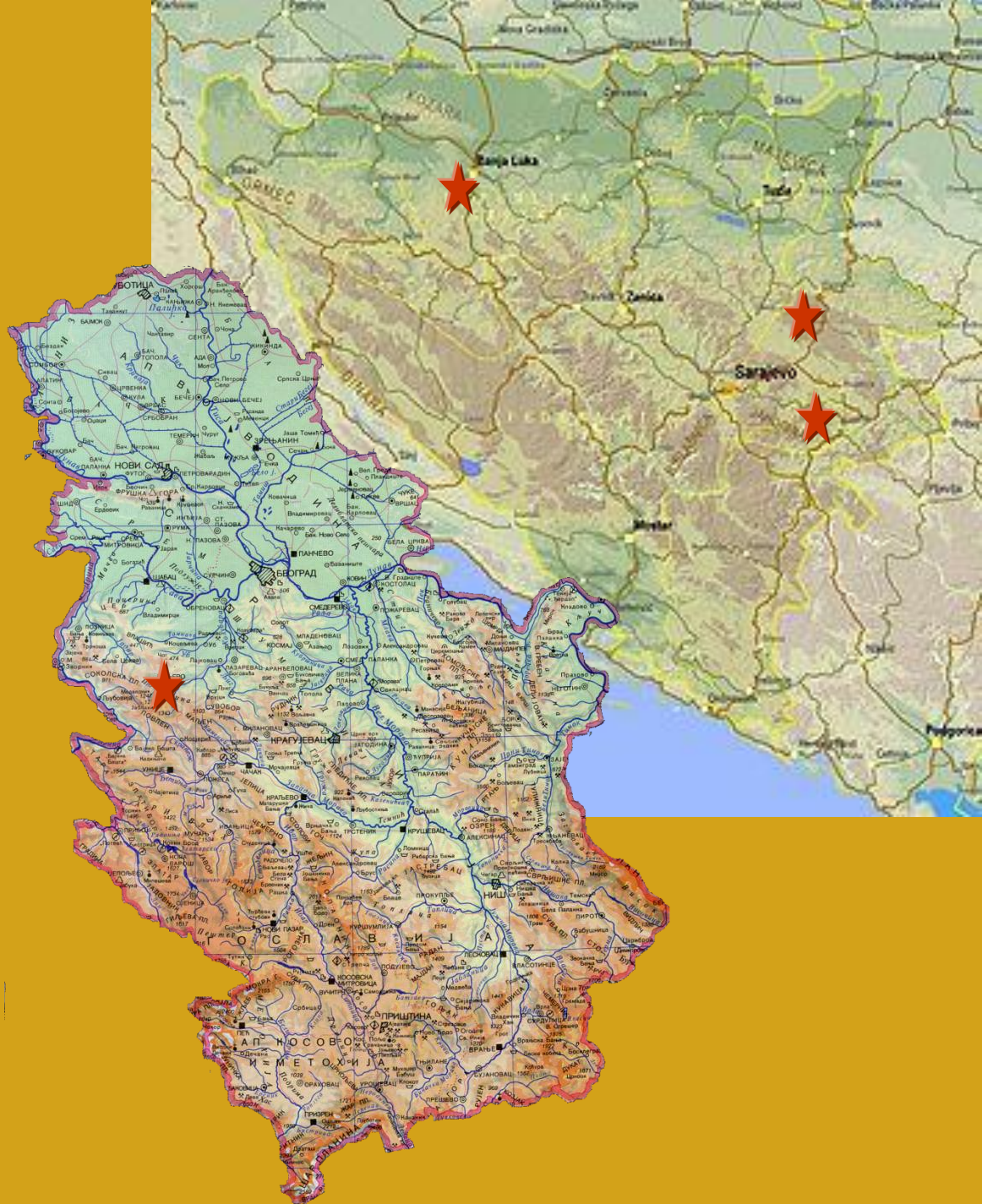


Annual pasture legumes

- ❖ The conservation of annual pasture legumes seeds have two important purposes:
 - ❖ the long term preservation of germplasm
 - ❖ the availability of base material to obtain new varieties well adapted to specific soil and climatic conditions



- One of the main goals of the programmes related to genetic resources of annual forage legumes is the conservation of a remarkable genetic variability of these crops
- these crops would be in the form of collections of accessions of diverse origin
- usage these local genetic resources for pasture improvement programmes




Biodiversity hotspot

- A biodiversity hotspot is a biogeographic region with a significant reservoir of biodiversity that is under threat from humans.

Our goal was to find and record hotspots in Serbia and Bosnia, rich in annual legumes important for pastures or hay. We made herbarium, took photos, and collected seeds.

Gene bank and collection of these species are the next steps.



Problem at the natural grasslands in Bosnia and Serbia - Legumes

- **In Bosnian and Serbian pastures, perennial and annual legumes take special importance as pasture species because of their high quality, production and aptitude to fix atmospheric nitrogen, but problems are:**
 - **the lack of leguminous species and its share**
 - **longevity of the legumes**
 - **well adapted annual legumes – answer?**

Location in Serbia

In 2011, we were looking for annual pasture legumes at three locations in Western Serbia, vicinity of city Valjevo

Western Serbia



Locations in Bosnia



During former researches and project activities, we have found areas with high biodiversity of forage plants and important for Bosnian livestock production. We were looking for annual pasture legumes in 2012 at locations in Western and Eastern Bosnia.

Vetches



- There are a lot of identified annual vetches at the central Balkan. Bosnia & Herzegovina is reservoir of plant biodiversity
- we looked for important forage vetches:
- *V. hirsuta*
- *V. tetrasperma*
- *V. villosa*
- *V. grandiflora*
- *V. lutea*
- *V. narbonensis*

Vetchlings

Lathyrus aphaca

- known as the yellow pea or yellow vetchling, native to southern Europe

Lathyrus hirsutus

- known as caleypea or rough pea

Pasture is the main use, but plants are easily damaged by trampling

Recommendation: Do not graze in late spring when seed pots are developed

Lathyrus cicera

known by the common names **red pea** and **flatpod peavine**, **dwarf chickling**. It is grown mainly in southern Europe and the Mediterranean region for the production of forage and grain. *L. cicera* is identified in “Flora of Serbia”



In Australia dwarf chickling is intended as a multipurpose crop for feed grain in cattle and sheep, fodder, hay and green manure. In contrast to grasspea, the grain of dwarf chickling contains low amounts of ODAP and other plant parts have insignificant ODAP concentrations



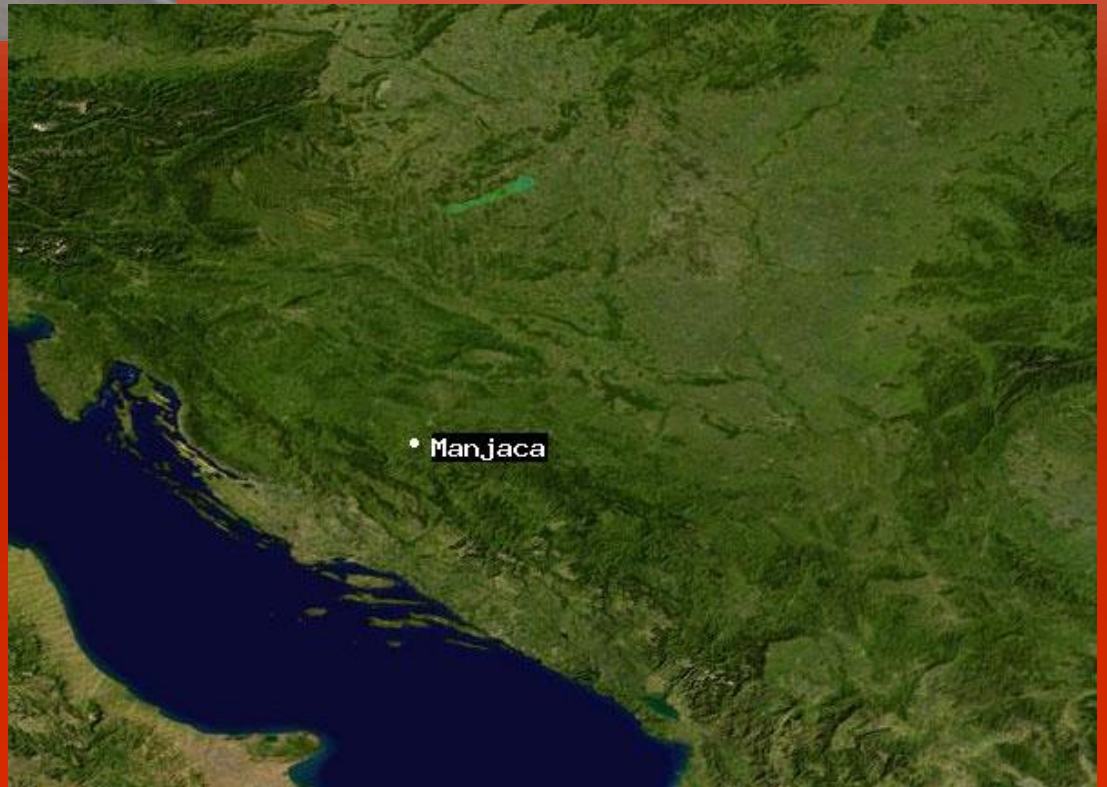
Manjača mountain (Western Bosnia)



- Journey - 18. june-21. june 2012.
- plateau in the vicinity of Banja Luka (500 m a.s.l.)
- Dominant plant association - *Festuceto-Agrostidetum vulgaris*
- Legumes - common species are *L. sativus* and *V. sativa*
- Colleagues from Faculty of Agriculture, Banja Luka, helped us to collect seed of marked species



- $44^{\circ} 33' 51.35''$ N
- $16^{\circ} 59' 8.99''$ E





Eastern Bosnia

- 3-4. july 2012.
- plateau in the vicinity of Sarajevo (1000 m a.s.l.) – municipalities Han Pijesak and Sokolac
- Mountain Devetak, location – Han Kram
($44^{\circ} 1' 39.58''$ N $18^{\circ} 54' 0.78''$ E, 1,095 m a.s.l.)



Location Bjelosavljevići

- Glasinac plateau
location near the road Sarajevo-Rogatica
- $43^{\circ}54'9''\text{N}$
- $18^{\circ}47'49''\text{E}$



Lathyrus aphaca
(yellow vetchling)
Lathyrus hirsutus
(rough pea)









Thank you for your attention

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Zemun