

The role of breeding
in organic forage seed
farming

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**In organic farming systems we
can use:**

- conventional varieties

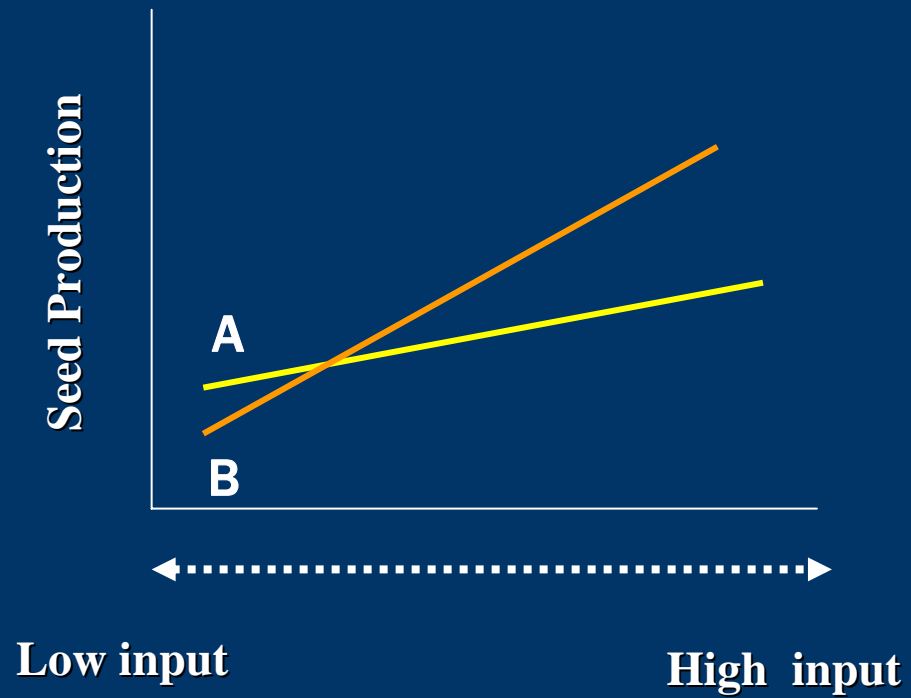
**In this case we should pay lot of
attention to the choice of the
varieties**

In alternative we can use:

- Ecotypes
- Landraces

B = Conventional varieties

A = Ecotypes or landraces



Moreover, we can
develop new varieties
specific for organic
agriculture

If so, the first step is to

decide

our “ideotype”

Grass and forage legumes

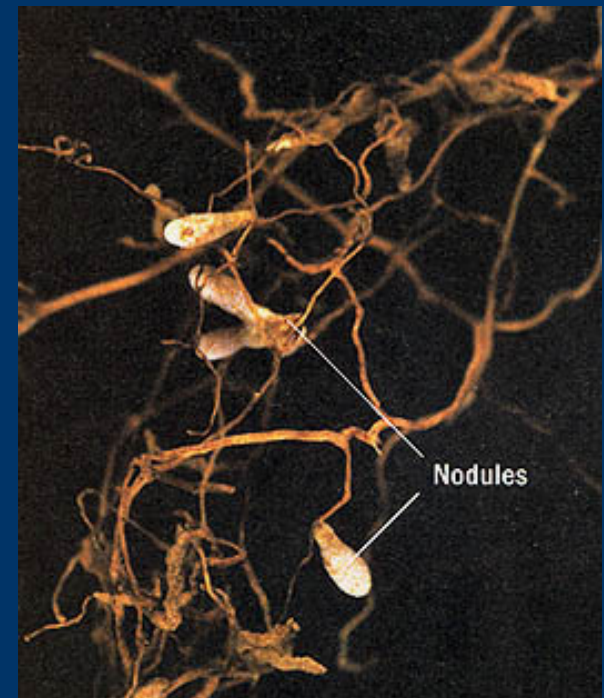


Once the ideotype has been decided
we have to:

select the breeding materials under
organic environmental

Other main traits of the ideotype should be:

- Satisfactory levels of production (both quantitative and qualitative)
- a deep root system,
- being able to establish symbiotic relationships with soil microorganisms (*Rhizobium* and *Mycorrhizae*)



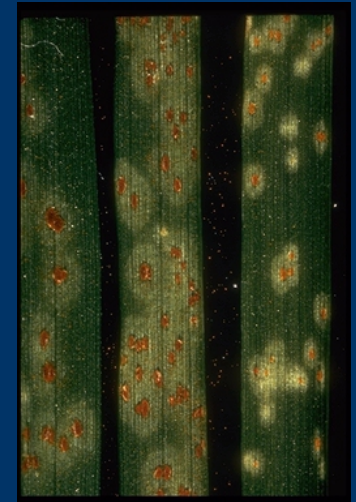
Moreover it should compete with weeds

Exploiting genetic variability for competitiveness:



- Plant architecture
- Rapid juvenile growth
- Deep rooting
- Allelopathic Exudate

- and being Resistant to diseases and pests



Alfalfa caterpillar



Cuscuta spp.



We have already applied

such a strategy

and

We developed a new variety of alfalfa for the Italian organic farming



Dense stand evaluation

Experimental fields in Spello (PG)



Spaced plants



Selected plants

Conclusion

What is the role of breeding in organic farming?

➡ To help and guide farmers to choose the right variety

➡ To save ecotypes, local varieties and the genetic biodiversity as a whole

➡ To start new breeding programs for obtaining varieties specifically adapted to the Organic Production Methods (large genetic base)

**So we have to perform research
and experimentation**

**Since, generally private companies do
not invest in breeding programs for
organic farming**

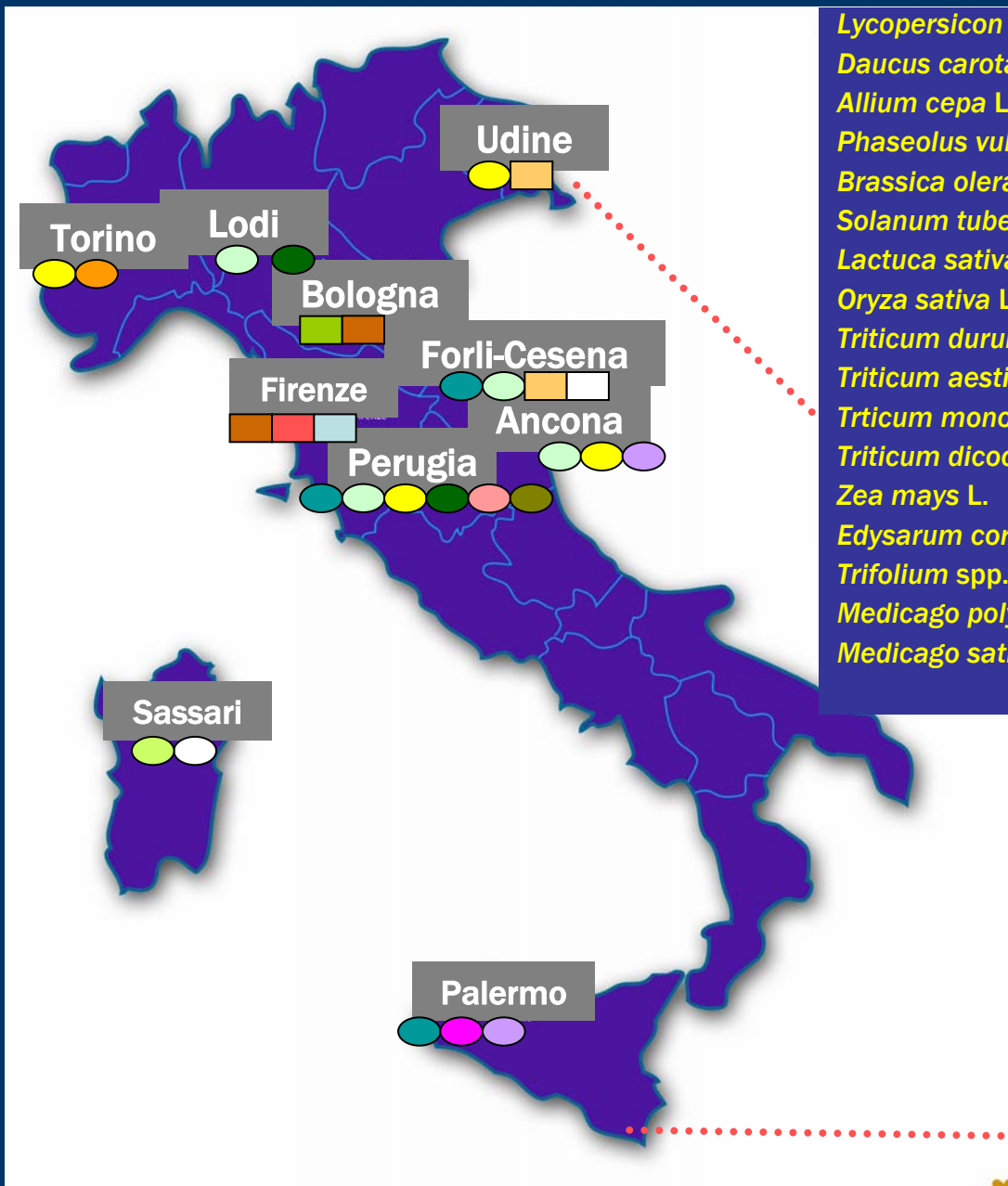
**the Italian region confederation
decided to grant a project that is just
starting**

The **project name** is

“Azioni di innovazioni e ricerca a supporto
del piano sementiero”

(a concerted action to support seed production)

And we are the **project leader**



- Lycopersicon esculentum* L. (Orange circle)
- Daucus carota* L. (Yellow circle)
- Allium cepa* L. (Light green square)
- Phaseolus vulgaris* L. (White square)
- Brassica oleracea* L. (Orange square)
- Solanum tuberosum* L. (Olive circle)
- Lactuca sativa* L. (White circle)
- Oryza sativa* L. (Teal circle)
- Triticum durum* L. (Light green circle)
- Triticum aestivum* L. (Red square)
- Triticum monococcum* L. (Light blue square)
- Triticum dicoccum* Schubler
- Zea mays* L. (Pink circle)
- Edysarum coronarium* L. (Pink circle)
- Trifolium* spp. (Purple circle)
- Medicago polymorpha* L. (Light green circle)
- Medicago sativa* L. (Dark green circle)

Vegetables

Cereals

Forages



- Thanks to the International Herbage Seed Group For Supporting and recommending This Project

Point for discussion

- Use of conventional varieties
- Alternative to conventional varieties
- Breeding strategies
- Breeding for seed production

3.7.Sept. 2006

- 26 Eucarpia Fodder Crops and Amenity Grasses section
- Breeding and seed production for conventional and organic agriculture
- WWW.eucarpia2006.net