



UNIVERSITÀ
DEGLI STUDI
DI MILANO

PhD Course in Environmental Sciences

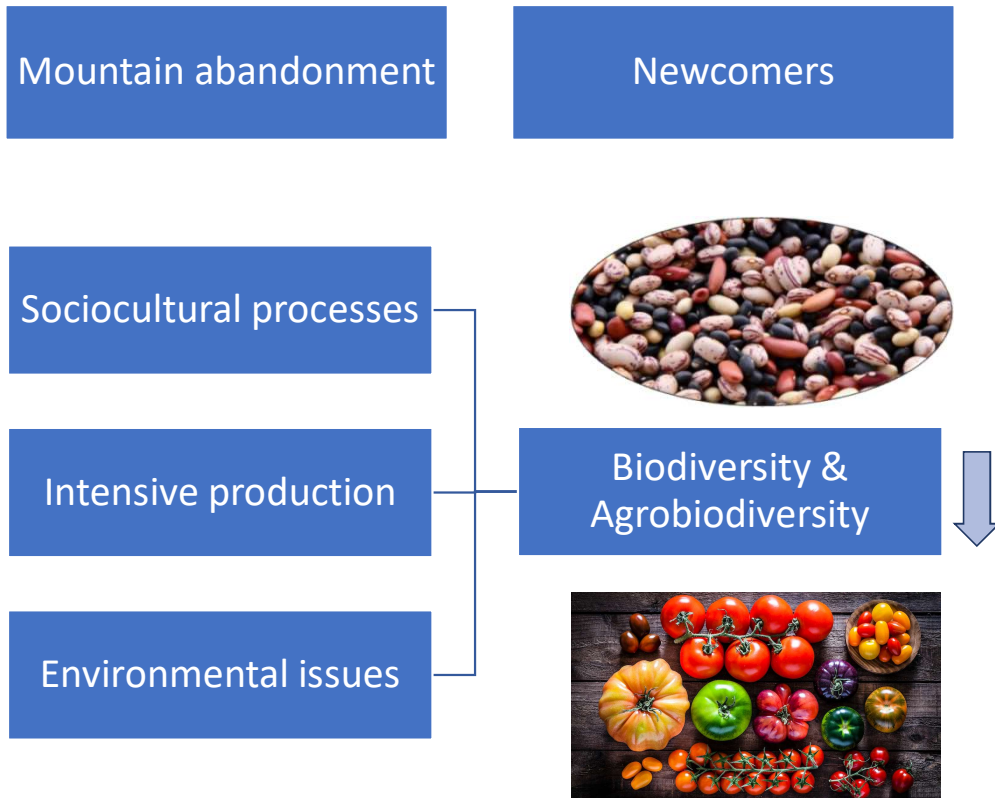


Landraces can be agri-food resources for the sustainable development of mountain areas: the case of “Copafam” bean (*Phaseolus coccineus* L.).

Davide Pedrali

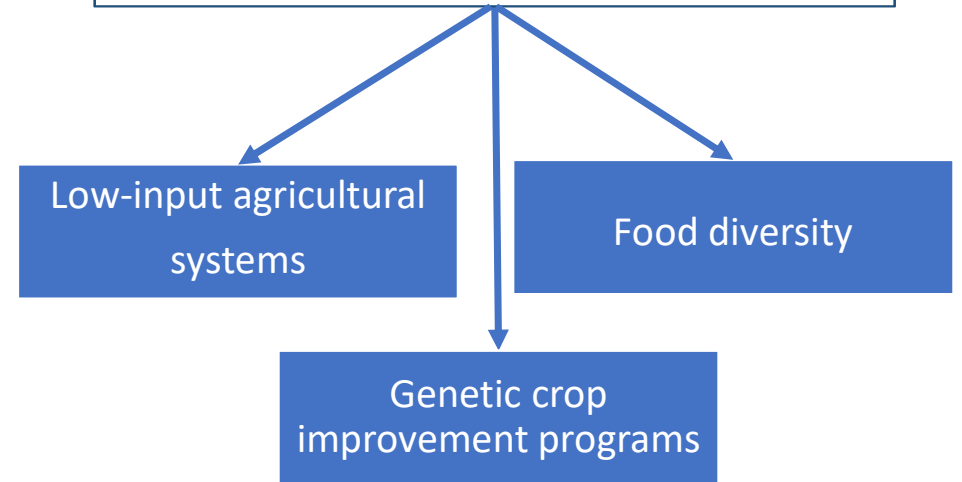
February 9th 2023

State of the art



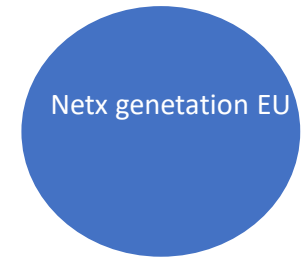
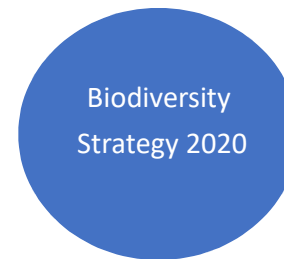
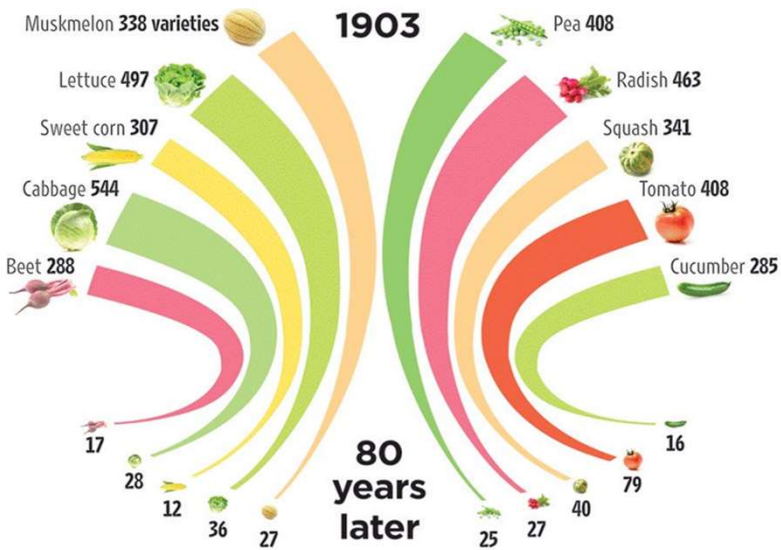
LANDRACE = land + race

Ancient breeds and varieties play an important ecological role where agriculture and livestock contribute to the maintenance of peculiar habitats and ecological systems.

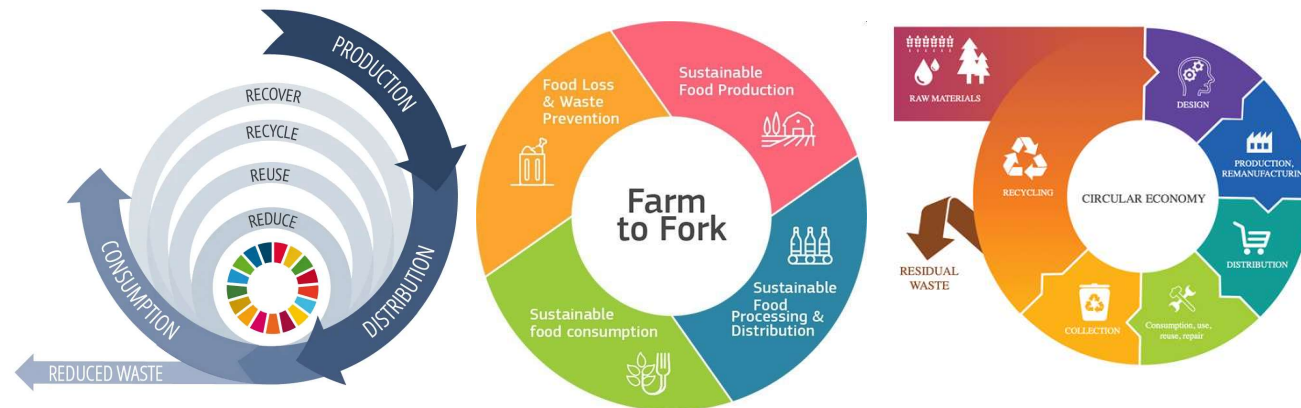


State of the art

According to FAO, the 75% of plant agrobiodiversity was lost in the last decades



Transition to sustainable food systems



State of the art

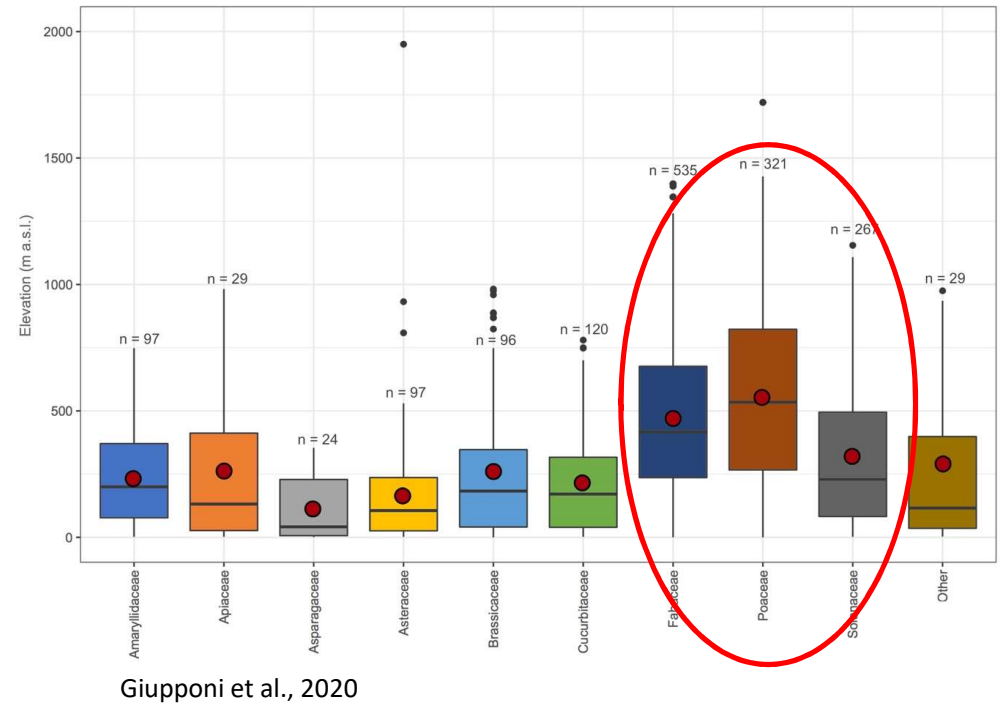
Mountain and sub-mountain areas are hotspots of horticultural agrobiodiversity

- The majority of landraces are concentrated in the mountain and sub-mountain areas, in a wide altitudinal range (150–800 m a.s.l)
- Most numerous families: *Fabaceae*, *Poaceae*, and *Solanaceae*



Distribution map of the Italian landraces
Giupponi et al., 2020

More than 1600
herbaceous landraces



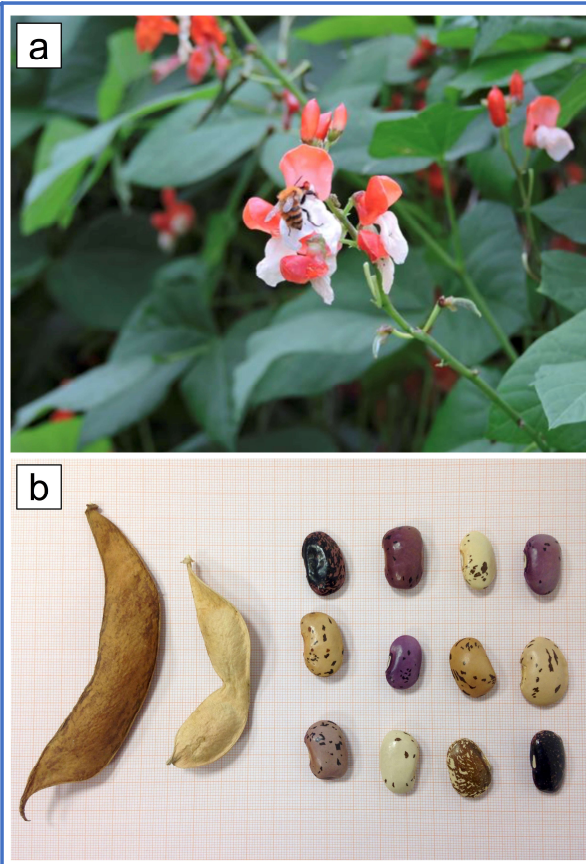
Giupponi et al., 2020

They can constitute important resources
for the sustainable development of
mountain areas

State of the art



Distriburion map of the Italian landraces
Giupponi et al., 2020

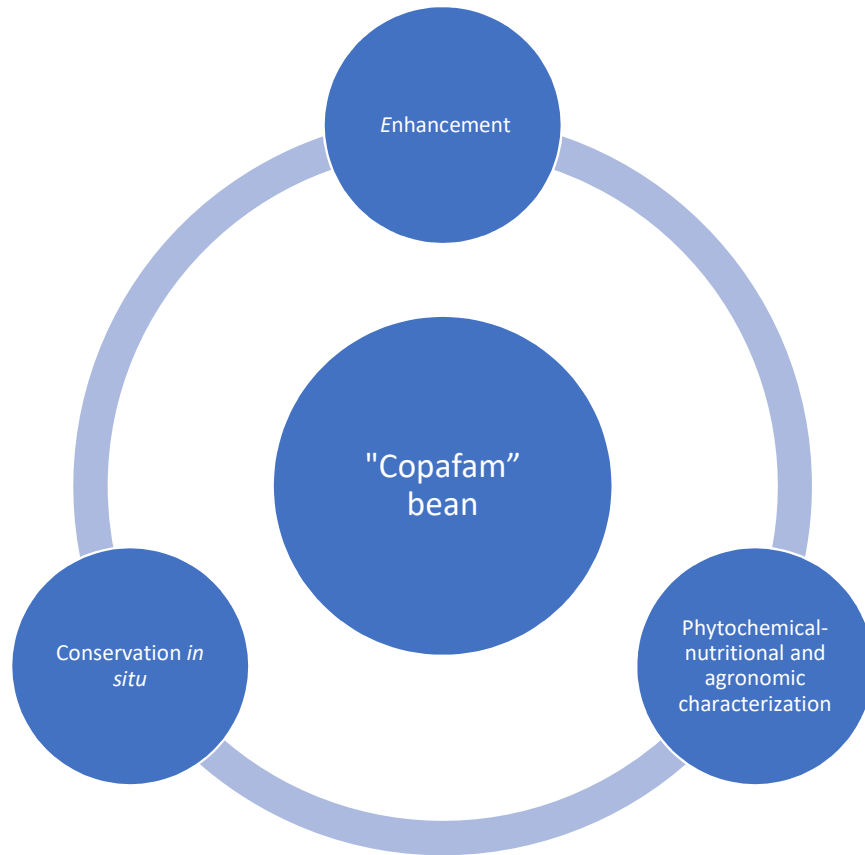


Risk of extinction

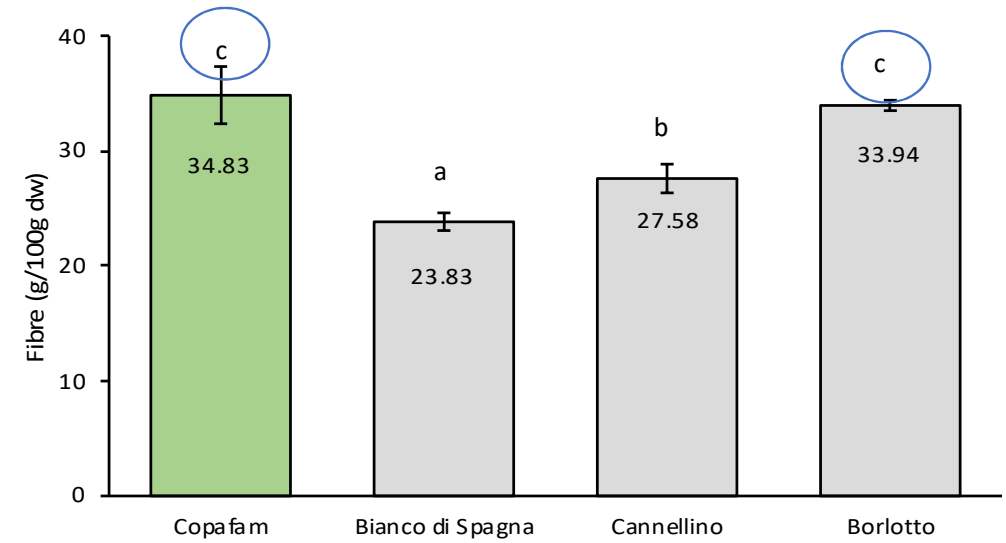
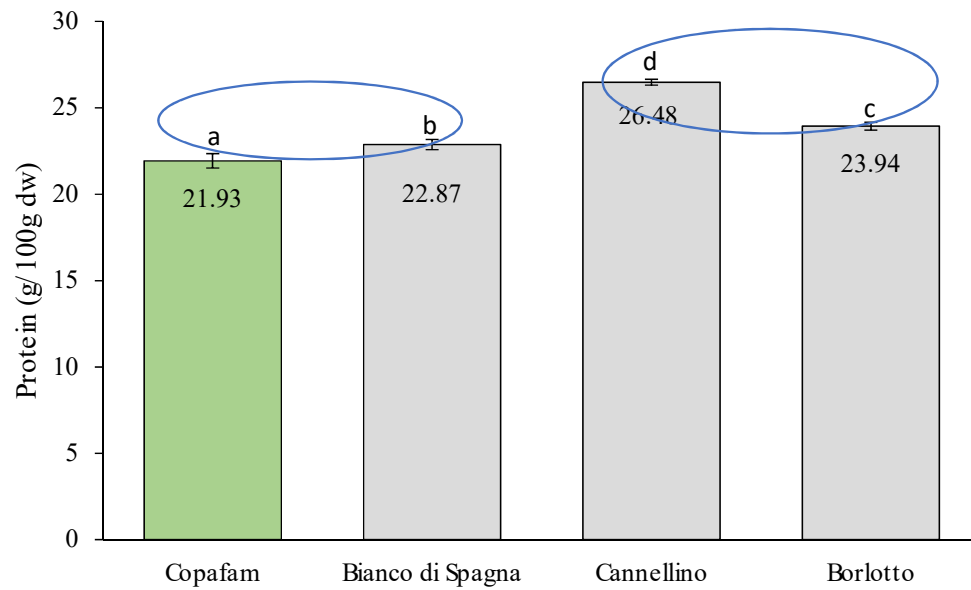
Mountain areas

Potential
source for *Functional
food*

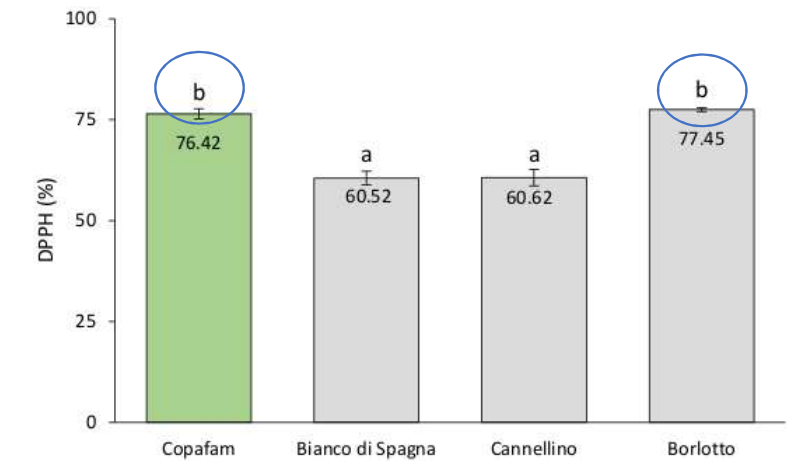
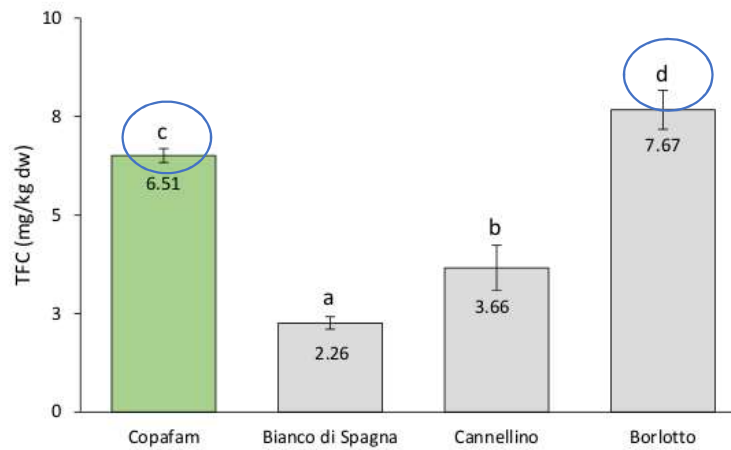
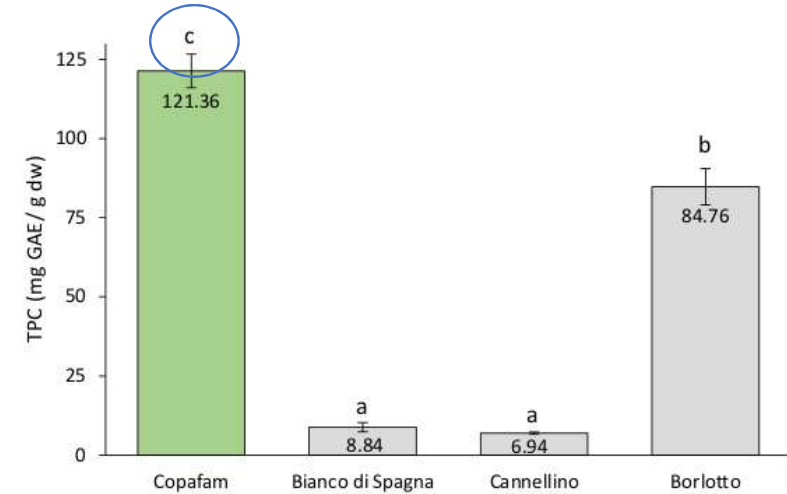
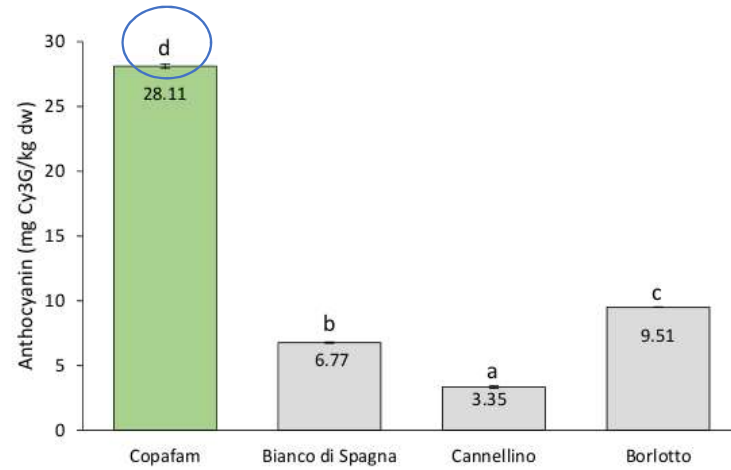
Work aims



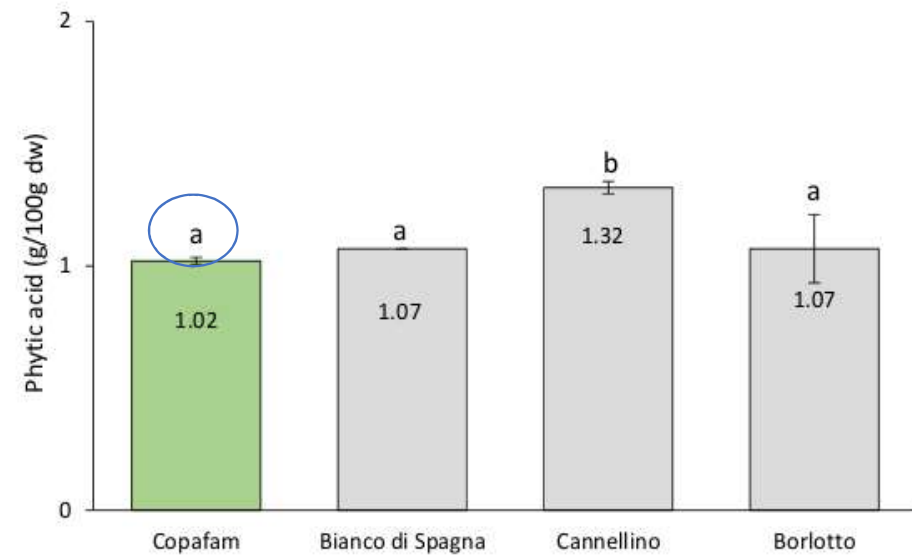
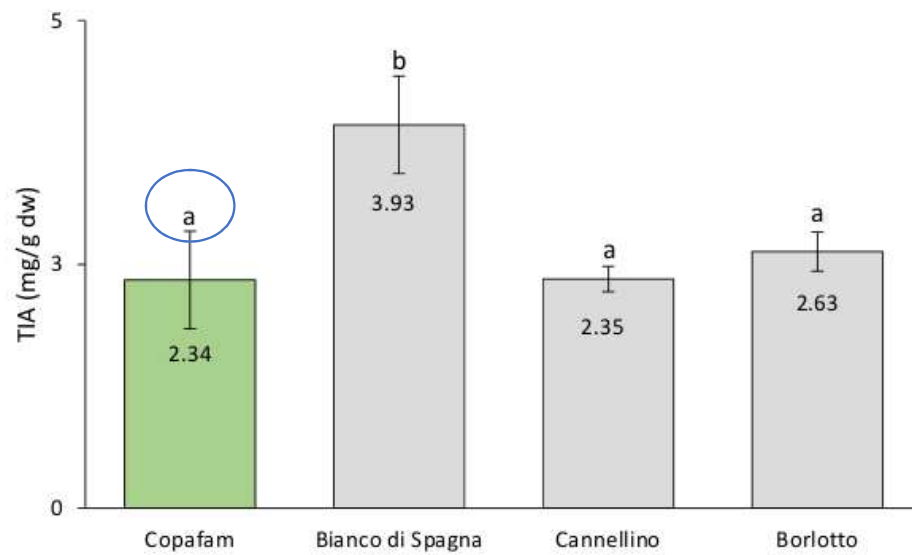
Results



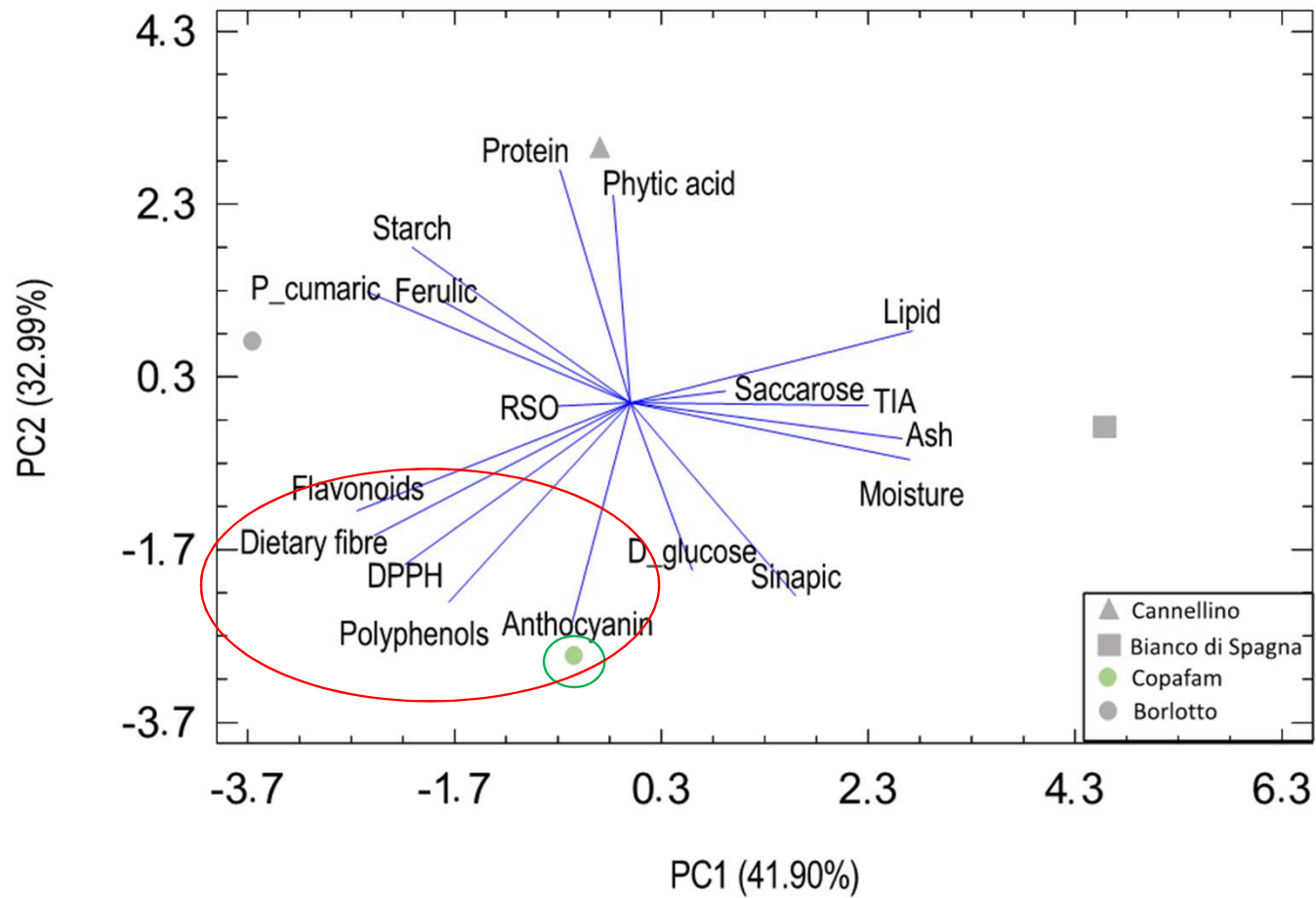
Results



Results



Results



Results

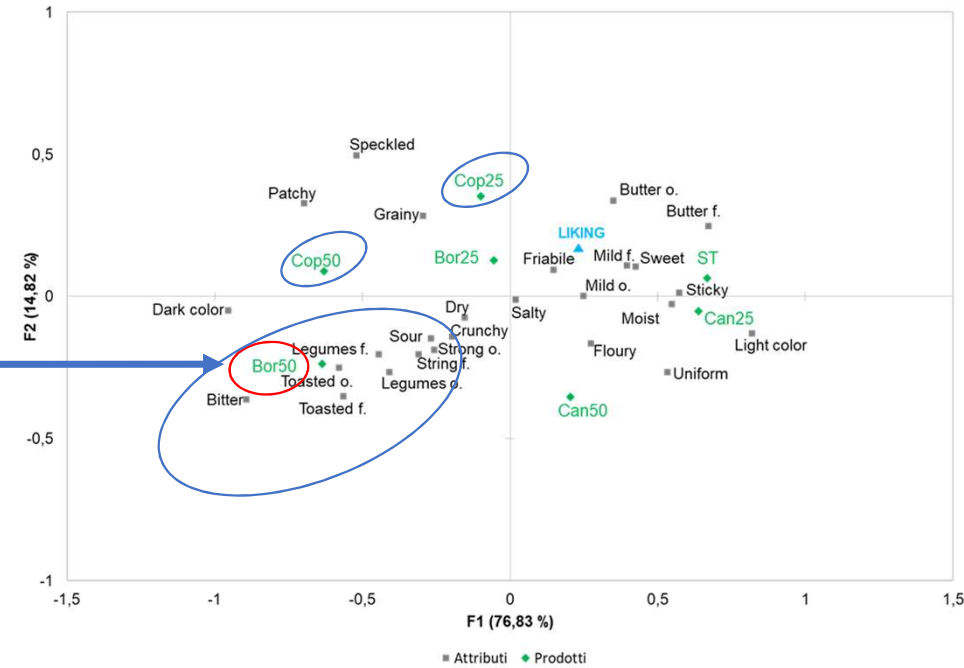
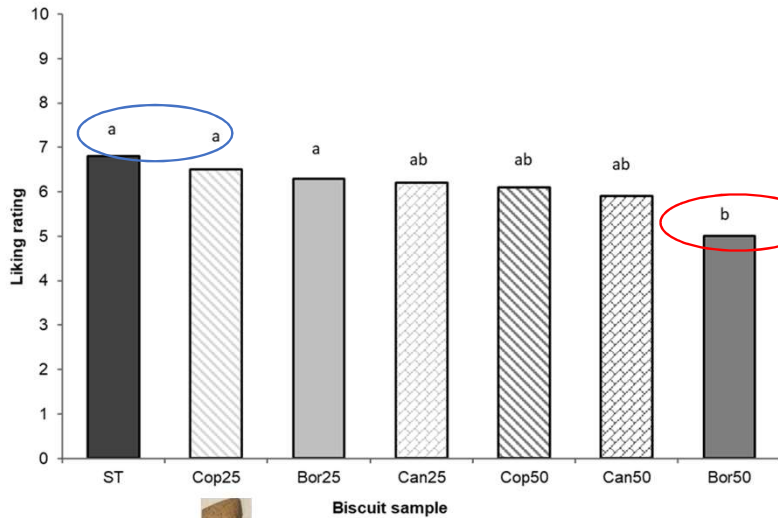


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Results

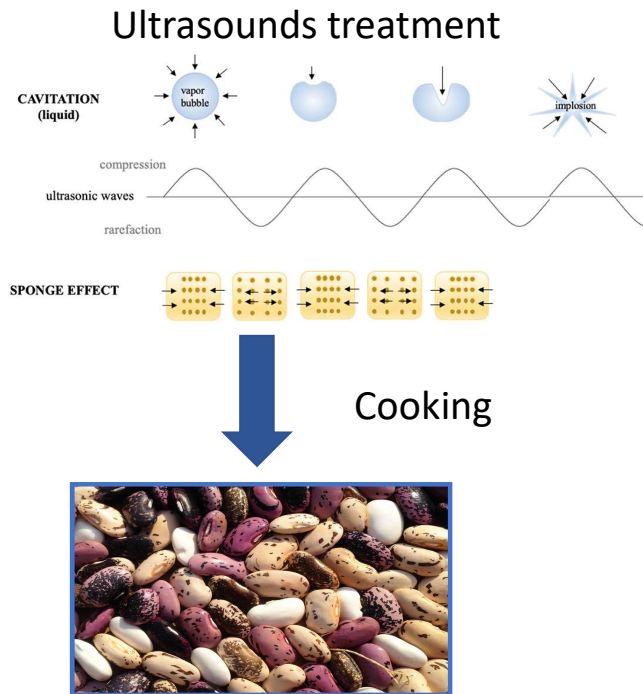
Biscuit with Copafam flour got the same value of the cookie without bean flour



Biscuit with flour of Borlotto obtained the lowest score, and was characterized by a bitter taste and presence of smell and scent of legumes

Future

The development of innovative processes and products based on landraces and their by-products



"Copafam" Bean

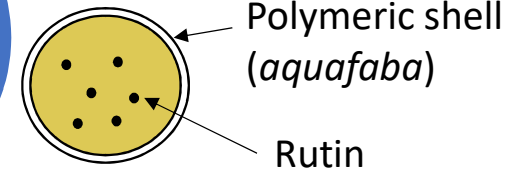


Cooking water (*aquafaba*)

Deactivation of anti-nutritional compounds

Phytochemical-nutritional characterization

Coating agent





Thank you for your
attention

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