

Cucurbits phenotyping for a sustainable agriculture

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INTRODUCTION

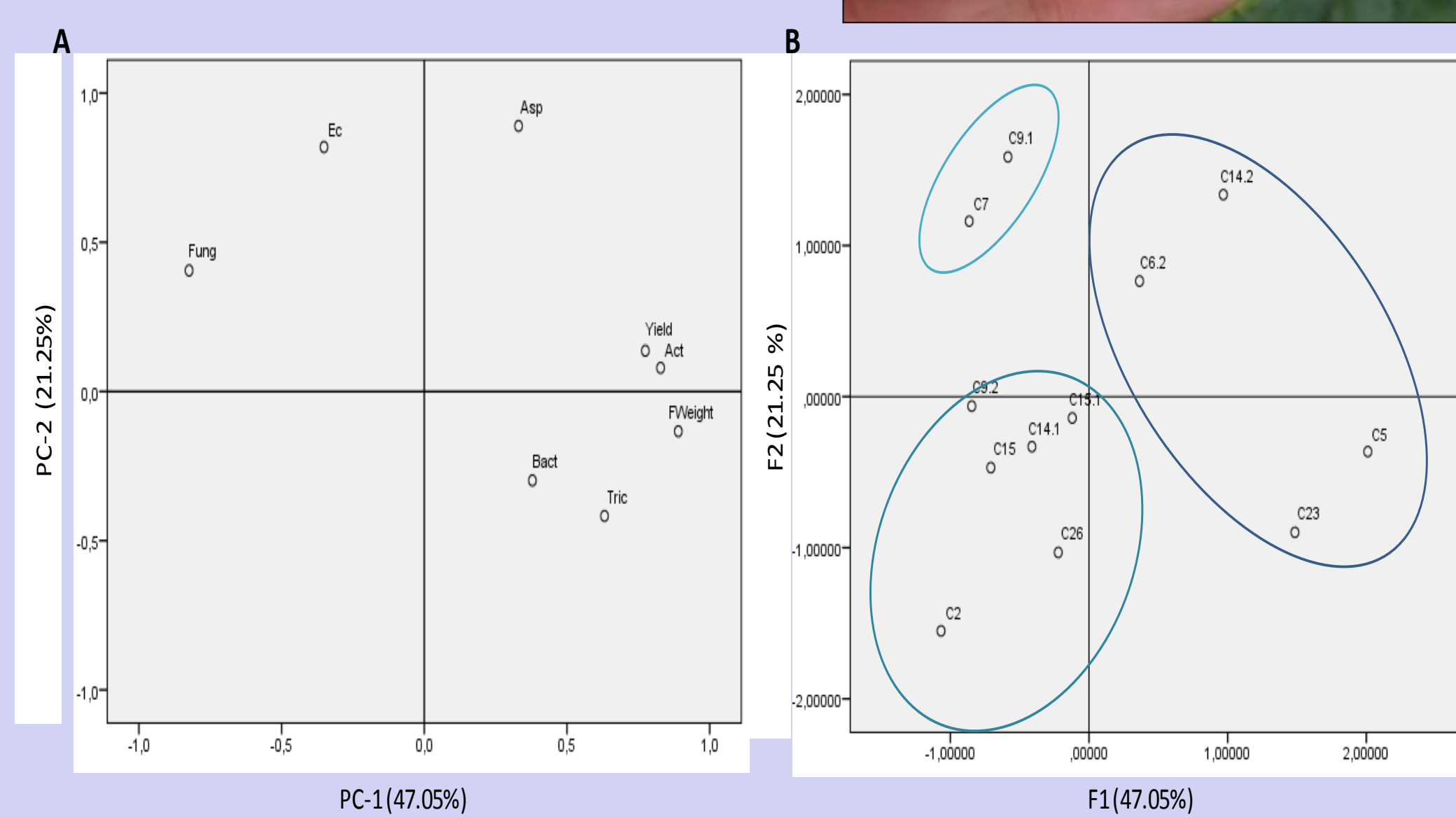
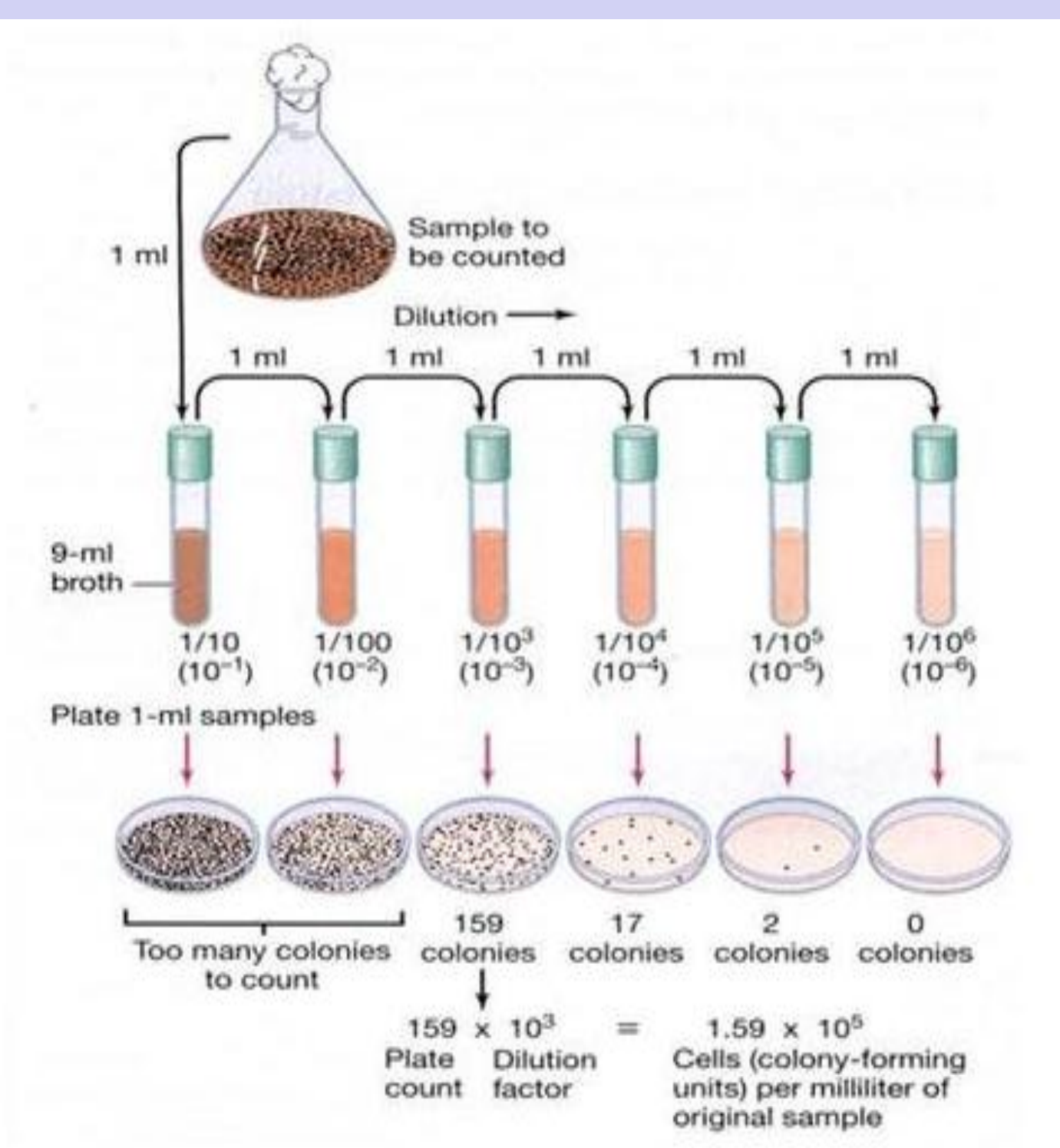
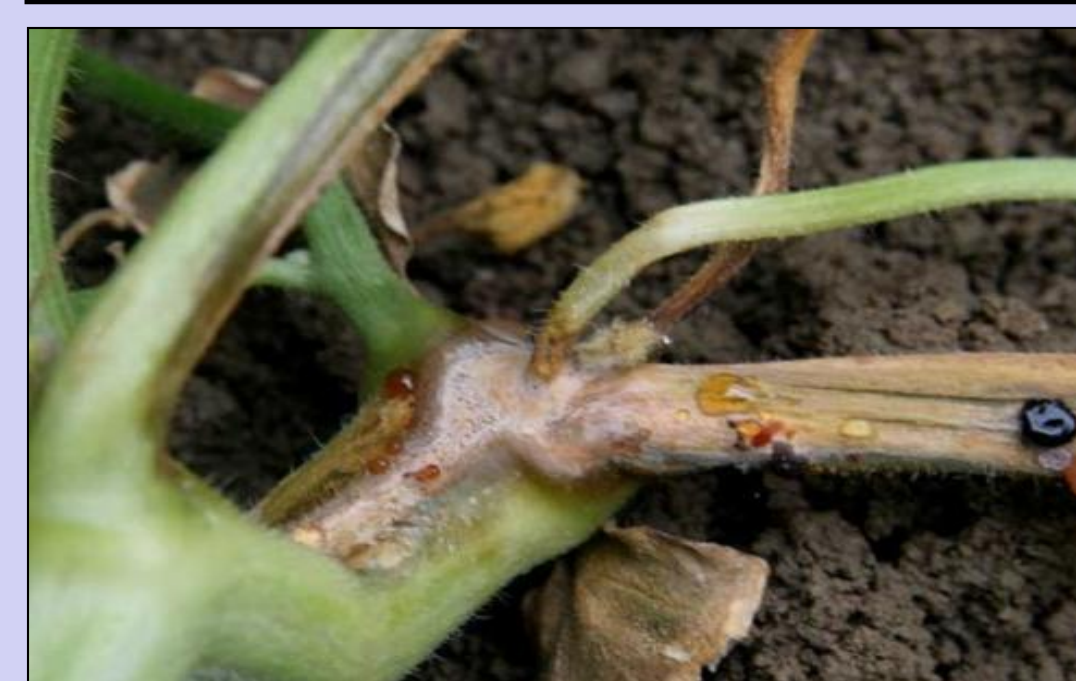
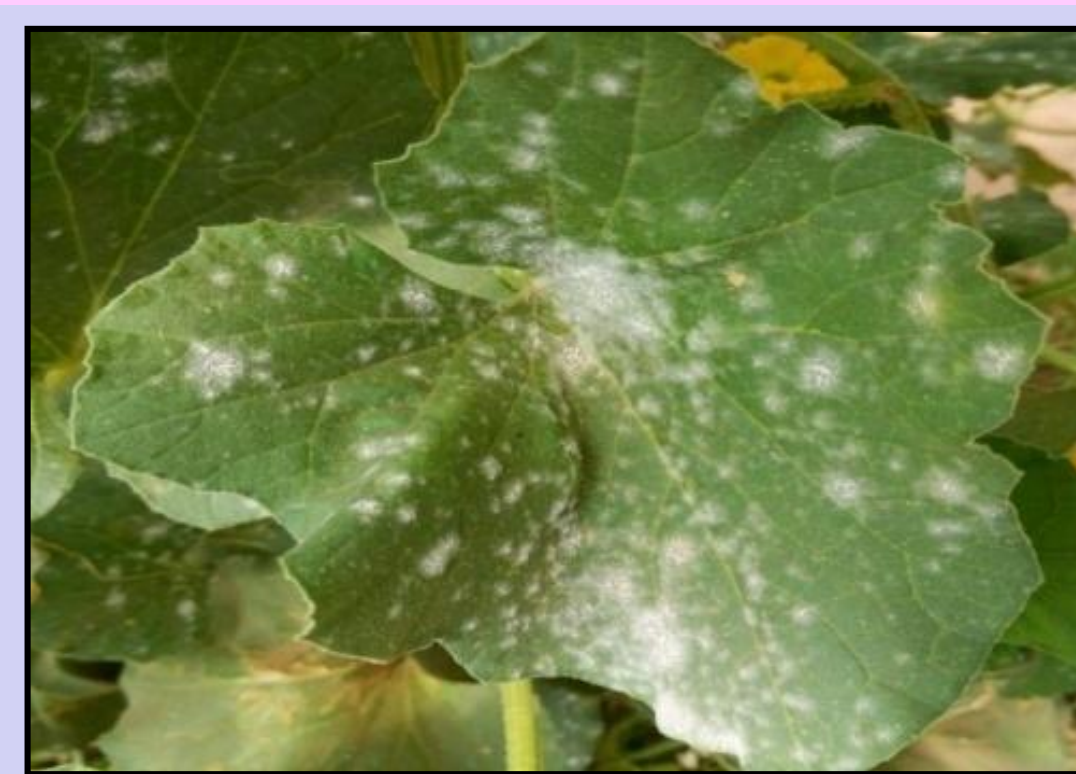
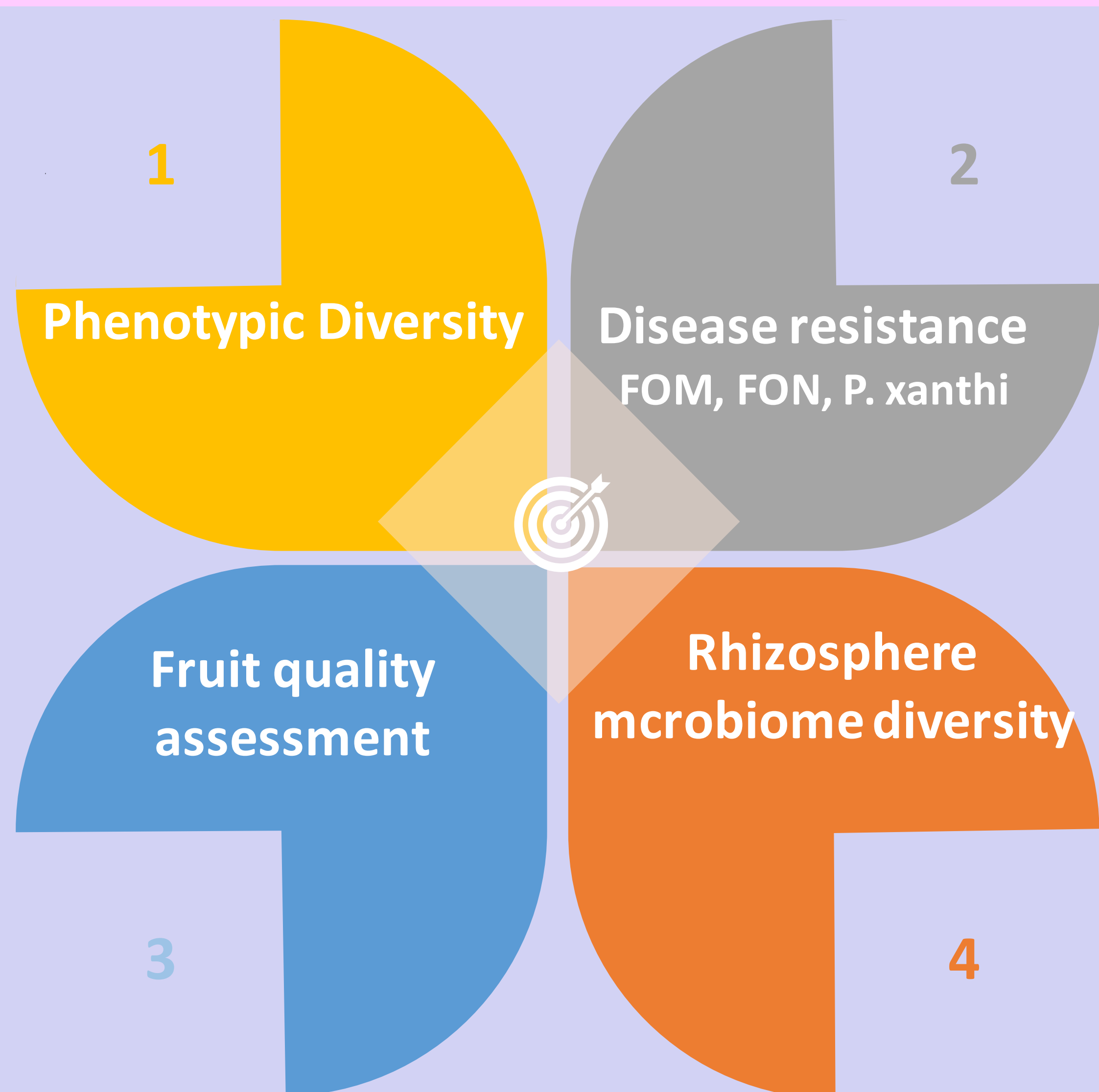
The Cucurbitaceae family, also called cucurbits are cultivated worldwide in warmer regions. Watermelon (*Citrullus lanatus* (Thunb.) Matsum. and Nakai), melon (*Cucumis melo* L. var. *reticulatus*, *inodorus* and *cantalupensis*), snake melon (*Cucumis melo* L. var. *flexuosus*) and pumpkins (*Cucurbita pepo*, *C. maxima*, and *C. moschata*) are the most commonly grown cucurbits in Tunisia.

The landraces are a very important source of genetic diversity, constituting an important genetic resource for plant breeders.

With this aim, several Tunisian cucurbit landraces were phenotyped for a set of agro-morphological and quality traits, the rhizosphere microbiome composition, and resistance to fungal diseases.

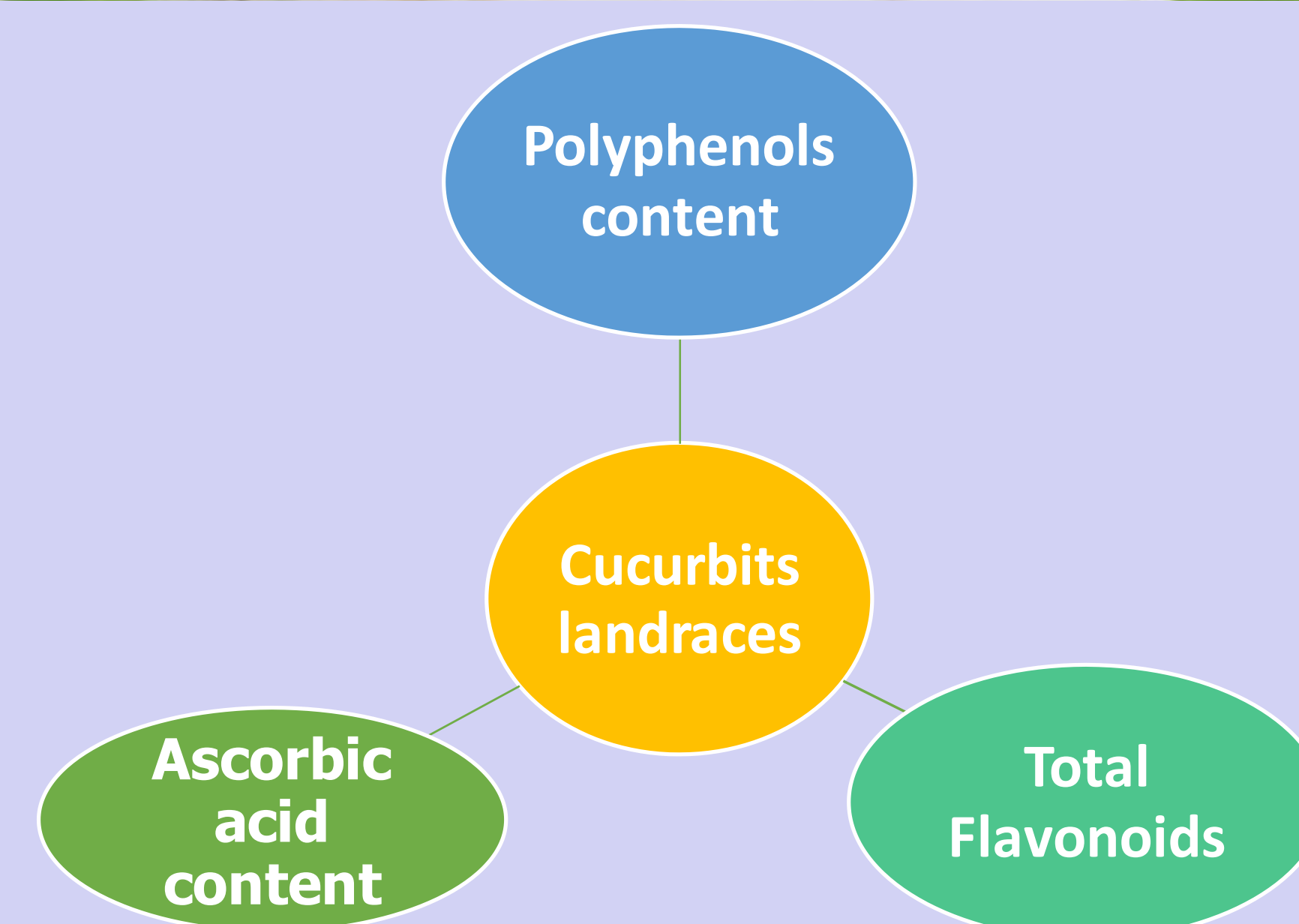


The objective of the present study was to **collect** and **characterize** cucurbits landraces (melon, watermelon, pumpkins), for their **valorization** in breeding programs



Multivariate analysis

- The greatest average fruit weight and yield.
- The highest actinomycetes, bacterial, *Trichoderma* spp. and *Aspergillus* spp. populations.
- The lowest total fungal population in their rhizosphere.

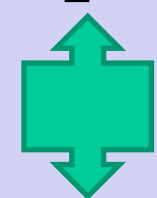


CONCLUSION

A high diversity for all the evaluated parameters and several sources of resistance with promising quality were identified, demonstrating the worth of Tunisian cucurbits genetic resources as a valuable gene pool for the sustainability of agriculture. Planning strategies for their conservation and the use of this diversity in breeding programs are necessary for achieving that objective.

❖ The rhizosphere microbial population structure:

the soil dilution plating technique on specific media.



❖ Screening for production and yield parameters.