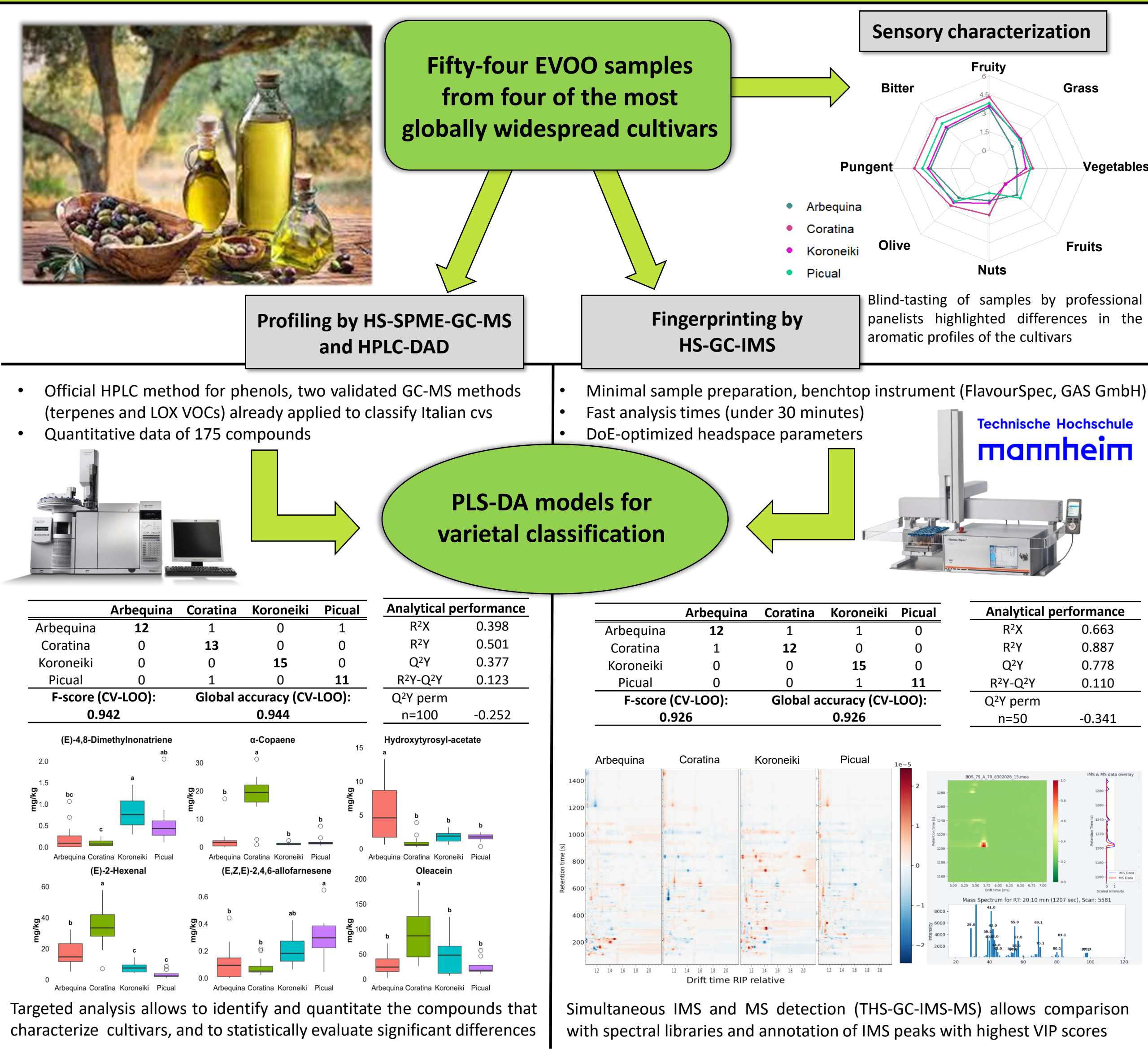


Can benchtop volatilomics keep up with detailed profiling in the classification of Monovarietal Extra Virgin Olive Oils? HS-GC-IMS is an environment friendly and highly sensitive analytical technique to collect fingerprinting data of volatile compounds. It has been applied for the product classification of EVOO, and for its geographical authentication. In this work it is used for the first time on the varietal classification of MEVOOs. The PLS-DA model based on IMS data was compared to the model obtained using established targeted profiling methods



Conclusions

This work demonstrates that fingerprinting GC-IMS analysis can provide results comparable to profiling MS-based methods for EVOO varietal classification. PLS-DA models based on both analytical approaches achieved high degrees of accuracy, which were not lowered by differences in geographical origin of samples from the same cultivar. While GC-IMS provided better figures of merit for the model with much shorter analytical times, targeted methods offered more qualitative and quantitative information on compounds that characterize the classes, allowing pointing out significative differences in the phenolic and volatile profiles of cultivars. Additional validation (i.e. test-set with samples from a different production year) will be performed on the models.

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