

Grappa ageing in Robinia wood barrels - Interesting potential for an invasive tree species?

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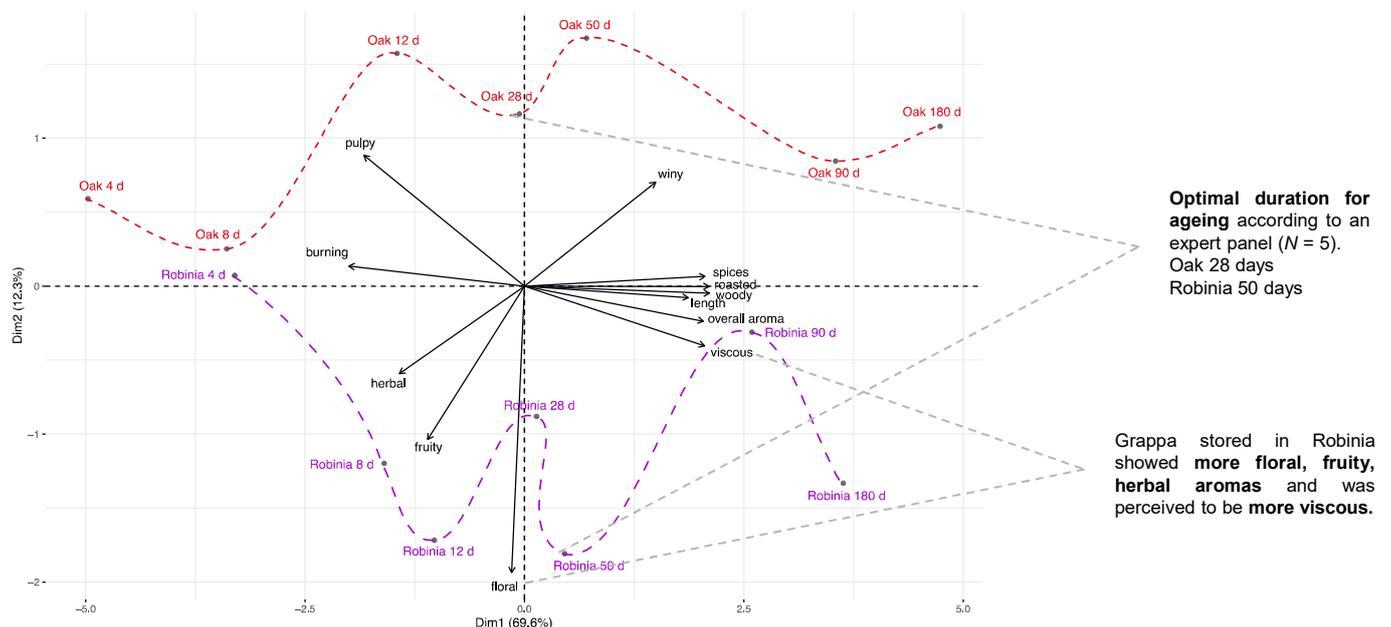
Introduction

Quercus petraea (Oak) is traditionally used to produce barrels for Grappa ageing.

The invasive *Robinia pseudoacacia* (black locust) in Switzerland has been subject of discussion in recent years, attracting more and more interest due to its versatility of uses.

Methods and Results

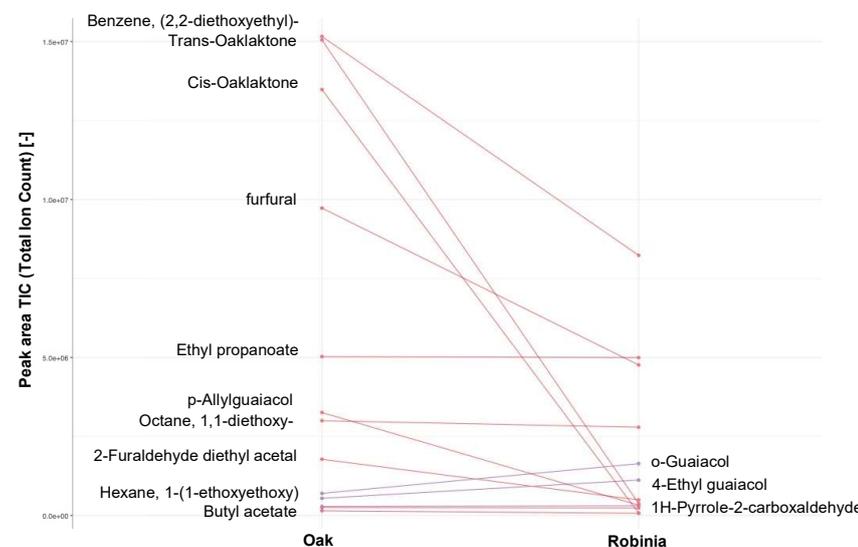
Three newly produced **50 L test-barrels** each, from Robinia and Oak, were filled with **Ticino Grappa (Merlot grape)**. The barrels were stored at 17.4 °C and 41.8% humidity for 180 days. Product aging was examined in replicates by a **trained sensory panel** of 12 tasters (Fig. 1) and according to a novel extraction method (1, 2) by gas chromatography and mass spectrometry (Fig. 2).



Optimal duration for ageing according to an expert panel (N = 5).
Oak 28 days
Robinia 50 days

Grappa stored in Robinia showed **more floral, fruity, herbal aromas** and was perceived to be **more viscous**.

Fig. 1: PCA biplot of the sensory descriptive analysis, showing the evolution of Grappa stored in Oak and Robinia barrels from 4 to 180 days.



Conclusion

Besides **ecological** and **silvicultural** aspects that speak in favor to a single tree-oriented management in order to improve timber quality and value production, Grappa distilled from Merlot grapes matured in Robinia wood-barrels could have considerable potential as a **niche product**. In addition the use of Robinia barrels offers the possibility of an **IGP-product** (Indication Géographique Protégée) with controlled designation of origin – a quality label protected by Swiss law.

Literature

1) FUCHSMANN, P.; TENA STERN, M.; BISCHOFF, P.; BADERTSCHER, R.; BREME, K.; WALTHER, B., DEVELOPMENT AND PERFORMANCE EVALUATION OF A NOVEL DYNAMIC HEADSPACE VACUUM TRANSFER "IN TRAP" EXTRACTION METHOD FOR VOLATILE COMPOUNDS AND COMPARISON WITH HEADSPACE SOLID-PHASE MICROEXTRACTION AND HEADSPACE IN-TUBE EXTRACTION. J CHROMATOGR A 2019, 1601, 60-70.

2) PATENT N° WO2020160686 A1

Fig. 2: Wood-type dependent volatiles after 180 days found by GC-MS analysis.