

# Hop Oil Profiling to Mitigate Climate Change Impact on Traditional Hop Varieties

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# European Climate Change

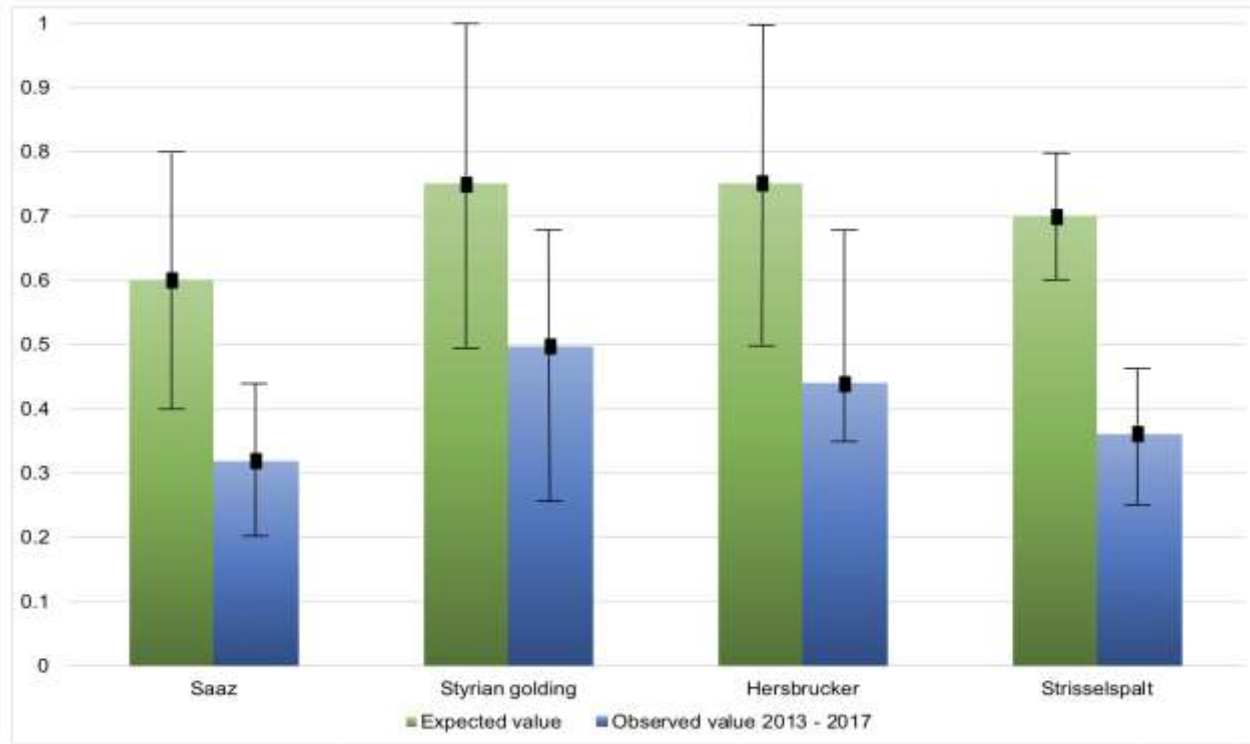
**Atlantic region**  
Increase in heavy precipitation events  
Increase damage risk from winter storms

**Continental region**  
Increase in heat extremes  
Decrease in summer precipitation



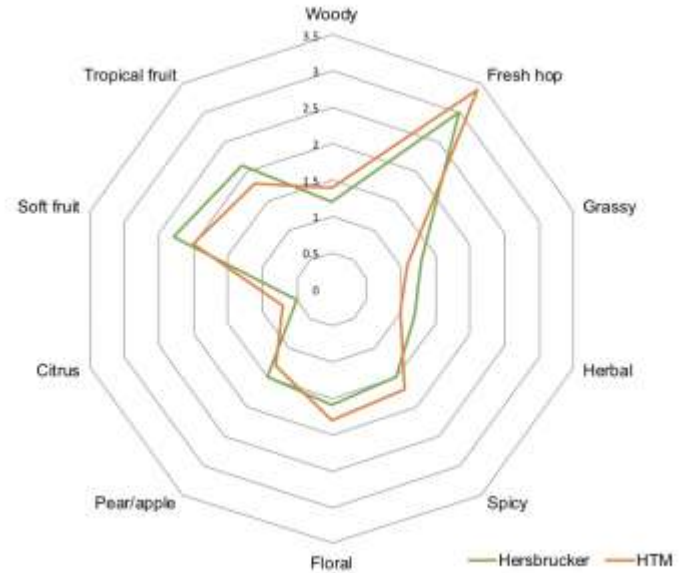
**Mediterranean region**  
Large increase in heat extremes  
Decrease in precipitation and  
increased risk of droughts

Projected impact of climate change on European weather patterns



Expected and observed oil content 2013 - 2017

- Analytical match for hop oils obtained using fractions from sustainable oils
- Organoleptic profile very similar to original oil
- Commercial substitution has been successful in major brands
- Can be used for hop varieties with low availability or in poor crop years



Sensory comparison of Hallertau Hersbrucker and the type match oil