



Impacts of climate change on hop production in Europe

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Climate change caused less predictability of hop yields and alpha production in Europe from year to year and decreased the stability of supply. Heat and drought waves can reduce hop yields and alpha acid content. The amount of alpha acid now relies more on the weather than ever before.

Hops are produced in fourteen EU countries. The leading EU producers are Germany, the Czech Republic, Poland, Slovenia, and the UK. The concentration of hop cultivation in the comparatively small regions makes it more vulnerable than if the crop were grown in more areas with different climates.

Statistical data suggest that hops are vulnerable to weather extremes. A higher frequency of drought and adverse hot weather may result in shortages for some popular varieties of hops used in beer. The noble hop varieties are conventional European aromatic hop varieties and are particularly vulnerable. They have low alpha acids and subtle aromatic qualities. They are most suitable for low IBU beers and traditional European styles, especially lagers. In 2015, alpha production in noble aromatic hops declined by 31 to 50%.

Greater use of irrigation has the potential to reduce hop yield fluctuations. Simulations using future climate predict that extreme weather is set to become more frequent in the future. Since other hops cultivation areas are also affected by this, climate change can distort the hop market. Climate change affects three of beer's core ingredients: hops, water, and barley. In the US, many leading breweries signed a climate declaration to call attention to the specific risks and opportunities of climate change in the beer industry.