Stale flavour aldehydes from hops – Acquittal!

A lot of the effects hops have on beer are proven with statistical evaluation. But there has always been the mystery about how much hops are involved in contributing to the development of stale flavours due to the decomposition of iso-alpha acids into staling aldehydes. These Belgium researchers studied the behaviour of the stereo-isomers of the bitter acids at very high and low concentrations of the trans–iso-alpha-acids. They found that the mode of bittering was not responsible for forced-aging aldehyde formation. Obviously the culprits regarding the flavour instability in beer in this context is the malt quality and the brewing process itself. because hops only do good things to beer.

Where do the Iso–alpha acids go?
The brewing process can be seen as a continuous process creating new substances but also destroying others. Comprehensive brewing trials conducted by German researchers focusing on the decomposition of iso-alpha acids leading to the following findings: High boiling temperatures, low pH values, high original gravity and high magnesium or calcium concentrations increase iso-alpha acid degradation up to 25%. As the isomerization of alpha acids during boiling in conventional brewing is already limited in the best of circumstances, we should take care not to lose them right away due to these factors.

Understanding the mystery of polyphenols
A good subject for never ending discussions is polyphenols in beer. They are the bad guys in beer-haze development but also are good guys for flavour stability...or perhaps not? Polyphenols do create different emotions amongst brewers! This article nicely reviews the current knowledge regarding the influence of polyphenols in beer including acting as antioxidants in flavour stability, but also playing a role as pro-oxidants, metal chelators, and protein binders causing haze, taste-active components, and contributing to the gushing phenomenon. As everything in brewing, this is just another complex subject!

How to picture beer haze?
Everybody knows that beer haze is caused by proteins and polyphenols, but this is by far not the full story. Carbohydrates or inorganic particles derived from filter aids or labels may also contribute to haze. This article reviews the different possibilities for non-microbiological haze formation and haze identification methods using dyeing techniques, microscopic analysis, and size exclusion chromatography. Take a closer look into your beer haze!

Program information and registration details are here:
http://www.hopsacademy.com/index.php?option=com_content&task=view&id=263&Itemid=624