



Tomahawk®

U.S. High Alpha Hop

The current CTZ super high alpha varieties, which include the names Columbus, Tomahawk® and Zeus have the same female parent as Nugget, making them at least half sisters to Nugget. The CTZ varieties are currently used extensively for beer bittering. However, CTZ's are losing favor due to their very poor storage characteristics and susceptibility to mildews

Pedigree	Same female parent as Nugget
Aroma	Aromatic, pungent
Alpha Acids*	15.0 - 17.0 %
Beta Acids	4.5 - 5.0 %
Cohumulone	28 - 32 % of alpha acids
Total Oil	2.5 - 3.5 ml/100g
Myrcene	50 - 60 % of total oil
Humulene	12 - 18 % of total oil
Caryophyllene	9 - 11 % of total oil
Farnesene	< 1 % of total oil
Storage Stability	Very poor

* Alpha acids are determined by conductometric titration (EBC 7.4) in Europe; by spectrophotometric (ASBC Hops-6) in USA