



## Hopunion CBS, LLC

### US NORTHERN BREWER

<b>Pedigree</b>	Bred in England in 1934 from a cross between a female hop of wild American parentage and an English male.
<b>Maturity</b>	Early to mid-season
<b>Yield</b>	1200 – 1600 kg./ha. or 1000 – 1400 lb./ac.
<b>Growth Habit</b>	Adequate in temperate climates but has difficulty growing when under heat stress.
<b>Disease/Pest Susceptibility</b>	Susceptible to downy mildew, no strong virus reactions. Has resistance to aphids and mites.
<b>Pickability/Drying/Baling</b>	Good
<b>Cone-Structure</b>	Medium-sized cone, only fairly tight. Prone to develop leaves in cones, also called “cock hops.”
<b>Lupulin</b>	Medium yellow. Fairly abundant
<b>Aroma</b>	Medium -strong
<b>Alpha Acids</b>	8 – 10% w/w
<b>Beta Acids</b>	3 – 5% w/w
<b>Co-Humulone</b>	20 – 30 % of alpha acids
<b>Storageability</b>	70 – 85% alpha acids remaining after 6 months storage at 20° C
<b>Total Oil</b>	1.5 – 2.0 mls/100 grams
<b>Myrcene</b>	50 – 60% of whole oil
<b>Humulene</b>	20 – 30 % of whole oil
<b>Caryophyllene</b>	5 – 10% of whole oil
<b>Farnesene</b>	<1% of whole oil
<b>General Trade Perception</b>	A true dual-purpose hop, containing moderate amounts of alpha acids combined with a good aroma profile.
<b>Possible Substitutions</b>	German Northern Brewer, Chinook
<b>Typical Beer Styles</b>	All English-styles, especially Porter, American Ales, Kölsch, Munich Helles
<b>Additional Information</b>	A major alpha hop in Germany, but declining in areas in England. Limited acreage in the US.
<b>Personal Notes:</b>	