



# LORAL<sup>®</sup> BRAND

## HBC 291

Developed by Hop Breeding Company and released in 2016, Loral HBC 291 has a noble heritage that straddles the fence between old and new world hop aromatics. It has the ability to complement all beer styles, making it a very versatile hop in the brewery.

### AROMA PROFILE

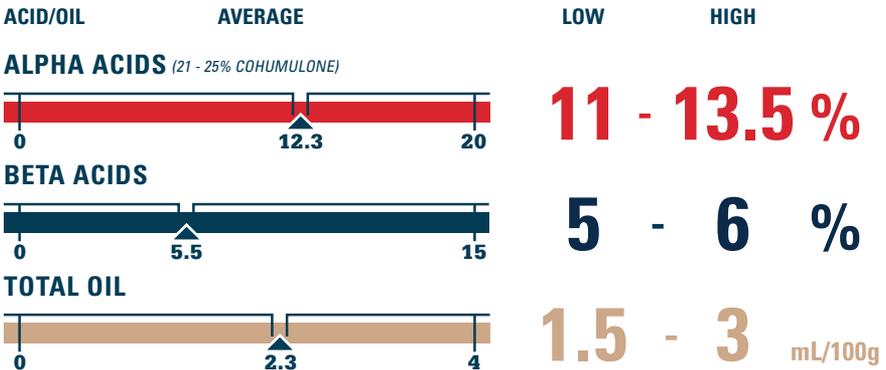
**FLORAL • CITRUS • LEMON • HERBAL  
MELON**

### BEER STYLES

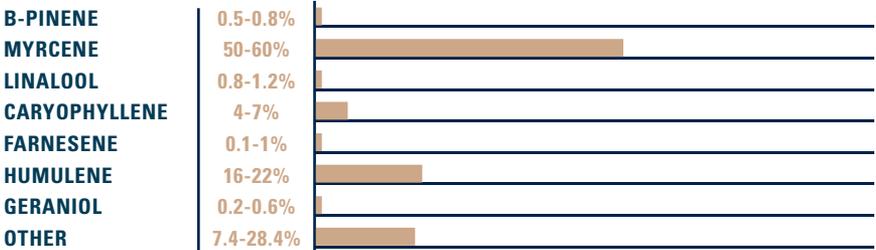
**AMERICAN PALE ALE • SAISON • WHEAT  
BELGIAN STYLE ALE • PILSNER • IPA**



### BREWING VALUES



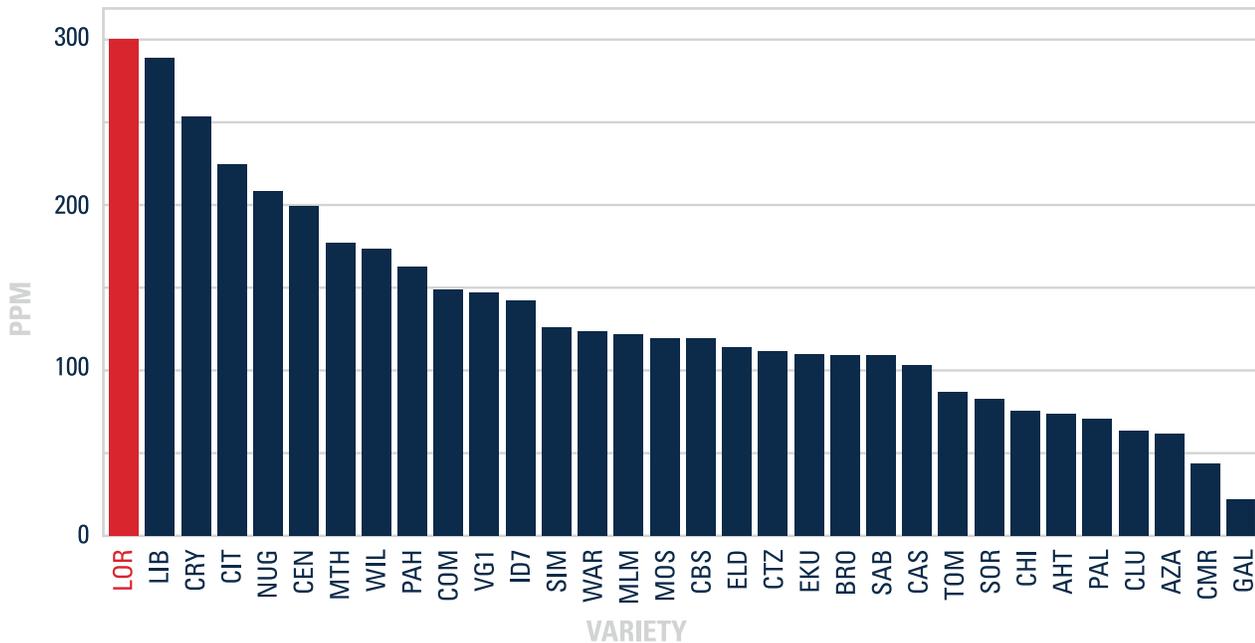
### TOTAL OIL BREAKDOWN (% OF TOTAL OIL)



# LINALOOL POWERHOUSE: LORAL<sup>®</sup> BRAND HBC 291



## AVERAGE LINALOOL CONTENT OF YCH VARIETIES (CROP YEAR 2019)



Linalool, a hop-derived monoterpene alcohol, has long been considered a significant indicator of hoppy beer flavor and aroma<sup>1</sup>. Like other monoterpene alcohols (ex. Geraniol,  $\beta$ -Citronellol), Linalool exhibits good solubility during the brewing process, even in the presence of heat and fermentation activity. Linalool therefore has a high “survivability” characteristic and regularly appears in moderate to high concentrations during lab analysis of hoppy beers. Additionally, research suggests that the aromatic effects of Linalool may be amplified in the presence of Geraniol and  $\beta$ -Citronellol, potentially increasing the perception of all three compounds<sup>2</sup>. It has been suggested that dosing hops based on Linalool content could be a viable strategy for increasing the perception of hoppy aroma in beer, especially in late kettle-hopping<sup>1</sup>.

With bright lemon zest and fresh-cut floral notes, **Loral<sup>®</sup>** exhibits an exceptionally high Linalool content--the highest among YCH-grown cultivars. This feature makes **Loral<sup>®</sup>** an excellent choice for late kettle, whirlpool, and dry-hop additions. Many brewers successfully harness the punchy citrus character of **Loral<sup>®</sup>** as a “brightener” in hop blends when used at a rate of 20-40%, especially when paired with other citrus-forward hops like Citra<sup>®</sup> and Simcoe<sup>®</sup>. Bright, bold, and analytically-charged, **Loral<sup>®</sup>** takes hop-forward beer to the next level!

### REFERENCES:

1. Hanke, S. (2009), Linalool-A Key Contributor to Hop Aroma, MBAA Global Emerging Issues-November 2009, [https://www.google.com/url?sa=t&rct=j&q=&esrc=s&source=web&cd=&cad=rja&uact=8&ved=2ahUKEwiFguyZytLsAhWkc98KHedRDbUQFjABegQIBBAC&url=https%3A%2F%2Fwww.mbaa.com%2Fbrewresources%2FDocuments%2FLinalool.pdf&usg=A0vVaw2jN9WNSKZ\\_lw8VCrPlaX3T](https://www.google.com/url?sa=t&rct=j&q=&esrc=s&source=web&cd=&cad=rja&uact=8&ved=2ahUKEwiFguyZytLsAhWkc98KHedRDbUQFjABegQIBBAC&url=https%3A%2F%2Fwww.mbaa.com%2Fbrewresources%2FDocuments%2FLinalool.pdf&usg=A0vVaw2jN9WNSKZ_lw8VCrPlaX3T)
2. Takoi, K., Itoga, Y., Koie, K., Kosugi, T., Shimase, M., Katayama, Y., Nakayama, Y. and Watari, J. (2010), The Contribution of Geraniol Metabolism to the Citrus Flavour of Beer: Synergy of Geraniol and  $\beta$ -Citronellol Under Coexistence with Excess Linalool. Journal of the Institute of Brewing, 116: 251-260. doi:10.1002/j.2050-0416.2010.tb00428.x



**YAKIMA CHIEF HOPS<sup>®</sup>**