

# Oak Alternative Effects on the Organoleptic Characteristics of Lager Beer

**Year: 2020 | Variety: Beer | Region: La Rochelle, France**

## SUMMARY

In 2020, Oak Solutions Group conducted a trial to determine the effect and benefits of eVOAK alternatives on the organoleptic characteristics of beers. Samples for this trial were collected in collaboration with Science Infuse, a specialized unit of the University of La Rochelle (South-West of France), dedicated to beer production and future brewers' training.

The objective of the trial was to compare different series and formats of eVOAK alternatives to determine the best oak recommendations according to chemical and sensory analyses. This data will be utilized to address customer inquiries on oak recommendations for breweries.

## DOSE RATE, CONTACT TIME AND METHOD

A pilsner type beer was used in the trial at 5% ABV with medium bitterness (25 IBU), a primary fermentation at 10 days, a 15-day cold storage and a filtering on earth. The following modalities were selected for the trial: High Vanilla tank stave, Pure 2 High Vanilla tank stave, High Mocha tank stave, High Vanilla chips, Pure 2 High Vanilla chips, High Mocha chips, High Spice chips, High Toast chips, NG 576 F chips, Cuvée 1 chips and XT4 chips. A control with no oak was also included. The dose rate used in the trial was based on 8g/L for oak chips (80g in 10L of beer), and 1 tank stave (125g in 10L of beer). All oak chips and tank staves were cleaned with alcohol (10 ml/80g of chips) for 24 hours prior to introducing

the oak to the beer. The contact time was based on a previous Oak Solutions Group trial conducted in 2019 recommending a contact time of 12 days for chips and 21 days for tank staves. Temperature during contact time was kept at 20°C.

## RESULTS

Regarding the total aromatic (mg/L), the chemical analysis revealed that the overall aromatic contribution of chips and tank staves formats are very close in term of concentration. In addition, the chips allowed the extraction of a wide range of aromas while the tank staves targeted certain types of aromas (Figure 1), and especially those related with toasted notes (Figure 2). Among all the modalities, the Pure 2 High Vanilla chips and the XT4 chips stood out for their respective high concentrations of Cis-lactone and Guaiacol, which can at times contribute to coconut and smoke, respectively. The High Mocha tank staves had a lower impact compared to the High Vanilla and Pure 2 High Vanilla tank staves.

Samples were also sent out for tasting to be ranked by preferences. In tasting trials, the results revealed a preference for High Vanilla and Pure 2 High Vanilla tank staves and High Toast for chips. The tank staves references were described with more spicy characters while the chips references were noted as being sweeter.

## Example of Chemical Analyses Conducted on the Trial

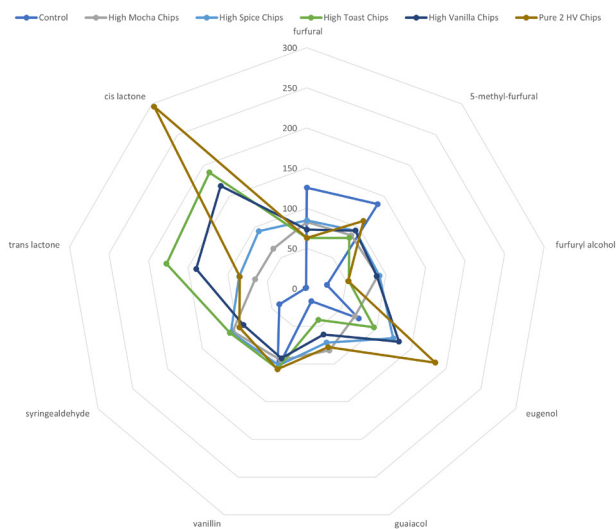


Figure 1

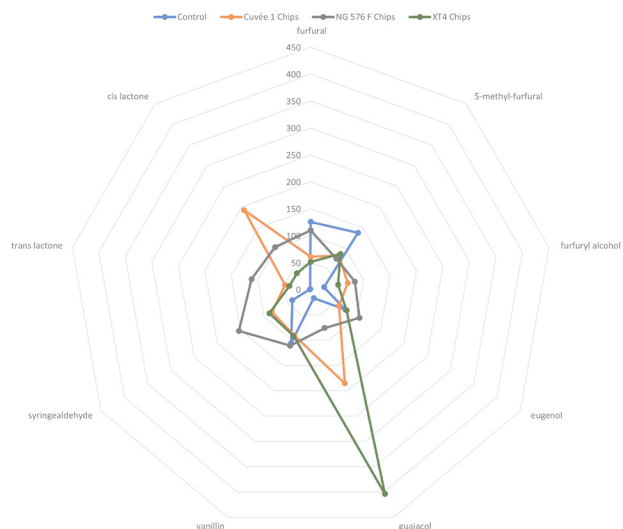


Figure 2

