



MICROWAVE EXTRACTION TECHNOLOGY ENSURES MORE PROFITABLE BREWING WITH TRUE HOPPING TECHNIQUE

CUSTOMER Hopskin is a craft brewery that produce quality beers, unfiltered and unpasteurised, with a strong character and balanced flavour.

Renowned for their innovative and high-quality beers, Hopskin continually seeks ways to enhance flavor consistency while reducing production costs.

CHALLENGE Hopskin aimed to address several goals:

- Enhance the hop flavor in their beer.
- Reduce the costs related to hops and beer waste.
- Decrease production time while increasing production volumes.

SOLUTION The brewery integrated Milestone's ETHOS X system and adopted The True Hopping Technology for their latest brew, HOPSKIN BIG DOUBLE, achieving 35% less hop used, 15% higher yield and enhanced shelf-life.

BACKGROUND

Based in Bergamo, Italy, Hopskin offers its own craft beers, brewed on-site, in its taproom as well as through a national distribution network. The brewery was established after four years of experimenting with small home-brewing systems. Hopskin Brewery now has a 1200-liter semi-automatic brewhouse and a 13,000-liter fermentation cellar. Today, Hopskin offers a wide range of styles, covering both lagers and ales, including sours and barrel-aged beers.

Nevertheless, brewmaster Paolo's love of Californian-style IPAs still shapes the tap list, as evidenced by the quality of his hop-forward beers, including international collaborations with American and European breweries.

Each process is meticulously overseen by the brewers themselves, from the selection of raw materials to the serving of the beers in the Tap Room next to the brewery. Their aim is to produce characterful, clean and balanced beers, striving for the highest quality in production. Renowned for its innovative and high-quality offerings, Hopskin is constantly looking for ways to maximize flavor by exploring new blends and technologies, optimizing production costs and pursuing sustainability.

CHALLENGE

In pursuit of these goals, the brewery explored the use of hop oils obtained with Milestone's ETHOS X and adopted our True Hopping Technology for their latest brew, HOPSKIN BIG DOUBLE.

Hopskin aimed to address several goals:

- Enhance the hop flavor in their beer.
- Reduce the costs related to hops and beer waste.
- Decrease production time while increasing production volumes.

LAB PROFILE MICROWAVE HOP EXTRACTION



| SOLUTION

Hopskin has adopted True Hopping approach to integrate the use of hop oils into their brewing process. The ETHOS X 2.0, powered by True Hopping technology, leverages microwave extraction to obtain pure hop extracts without using any solvents, thereby ensuring high-quality and consistent flavor.

| IMPLEMENTATION

- 1. System Setup:** The ETHOS X system was installed in Hopskin's production facility with minimal disruption to their operations.
- 2. Training:** Milestone's technical team provided comprehensive training to the brewery staff on operating the system and optimizing extraction parameters.
- 3. Process Integration:** The brewery began by loading the reactor with hops material (Citra, Idaho 7, Mosaic) and setting the desired extraction parameters. The microwave heating process quickly evaporated the target compounds and water content.
- 4. Extraction and Storage:** The condensed vapor was efficiently separated, and pure hop terpenes were collected and stored at -18°C to maintain flavor stability.
- 5. Application:** The distilled hop oil was mixed with a carrying agent and two addition moments were tested:
 - first addition in secondary fermentation from the top hatch of the fermenter directly into the beer, then gentle bubbling with CO_2 from the bottom of the fermenter until 0.5 bar is reached inside the fermenter
 - at the end of fermentation a COLD CRASH and 7-day lagering was carried out. During beer transfer to a tank, the second addition was performed using a T joint exploiting the carbonation already present in the beer and the CO_2 boostThe extracted hops matter was used in the kettle for bittering.

| RESULTS

- 1. Beer Produced:** HOPSKIN BIG DOUBLE
- 2. Beer Style:** Double NEIPA
- 3. Batch Volume:** 2000 L
- 4. Hop Strain:** Citra, Idaho 7, Mosaic (extract)
- 5. Hop Usage:** Flavouring



| COMPARISON OF HOP USAGE:

- **Conventional Dry Hopping:** 12 g/L
- **Milestone True Hopping:** 7.8 g/L (5.2 g/L pellet + 2.6 g/L oil)

“Implementing Milestone’s ETHOS X system for our HOPSKIN BIG DOUBLE has been a game-changer. The True Hopping Technology not only reduced our costs but also elevated the quality and consistency of our beers. It’s a perfect combination of innovation and efficiency that every brewery should consider.”

Paolo Algeri, Head Brewer at Hop Skin

| ADVANTAGES

- **35% Less Hop Used:** Significant reduction in hop pellet usage.
- **15% Higher Yield:** Enhanced production efficiency and output.
- **Enhanced Shelf-Life:** Improved stability and longevity of the beer’s flavor profile.

| CONCLUSION

Hopskin’s successful adoption of True Hopping Technology demonstrates the transformative impact of Milestone’s ETHOS X system. By enhancing efficiency, reducing costs, and maximizing flavor, our technology has enabled the brewery to explore new blends while maintaining its competitive edge in the craft beer market.

For more information, visit us at [Milestone’s website](#) or contact our [sales team](#).

| ABOUT MILESTONE

Milestone is committed to providing innovative solutions for the brewing industry. Our True Hopping Technology, encapsulated in the ETHOS X system, represents the forefront of hops extraction and utilization. Discover more about our products and how they can revolutionize your brewing process at Milestone.