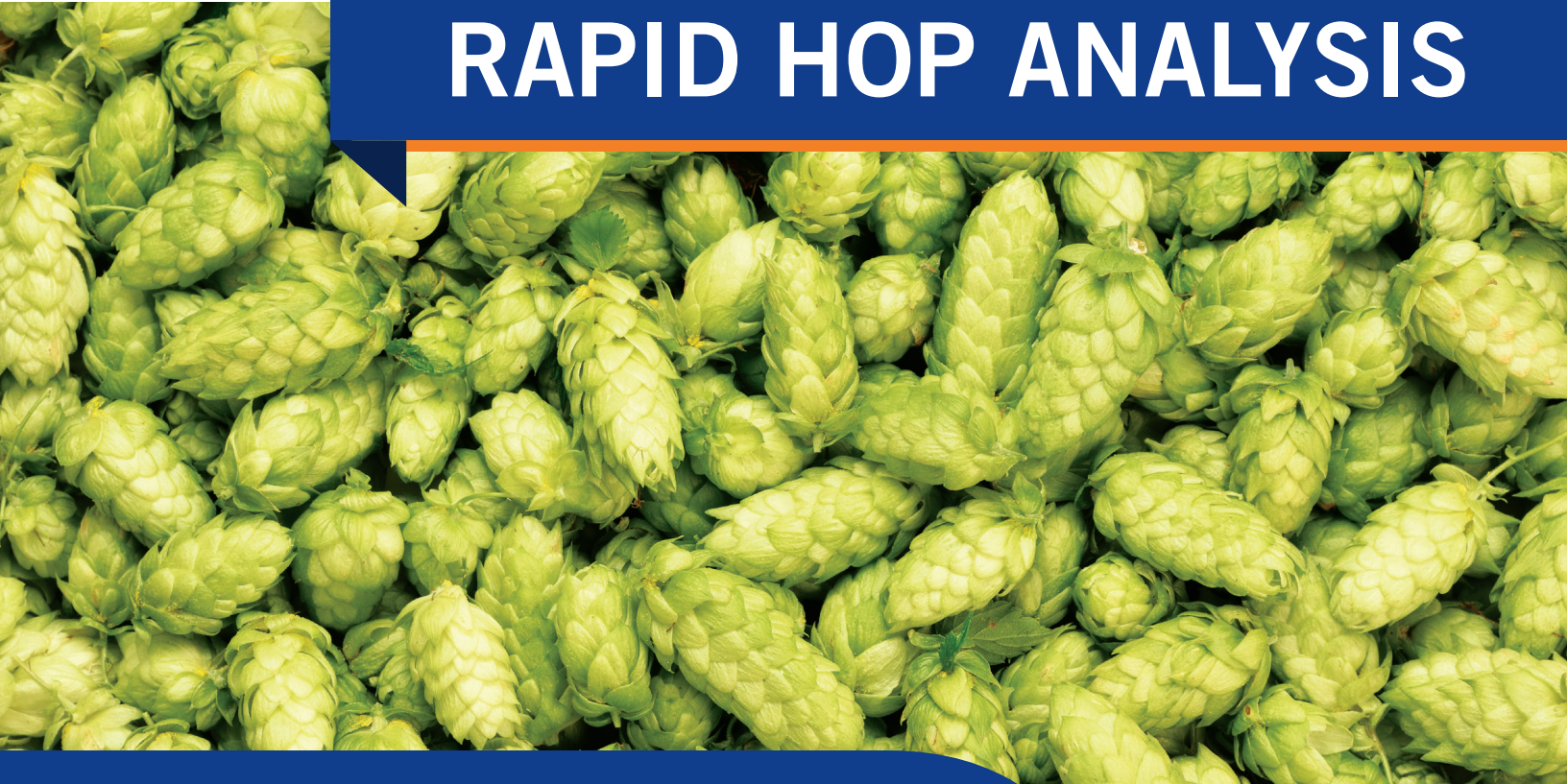


RAPID HOP ANALYSIS



The craft beer industry becomes more competitive each year, with only the highest quality products rising to the top. Now more than ever, brewers are demanding the best ingredients available to them. QTA[®] provides hop growers with the tools to analyze the quality of hop samples using the latest in infrared technology. Our on-site solution is capable of testing hops in wet, dry and pelletized forms in a matter of seconds.

What is the QTA[®] Solution?

Eurofins QTA[®] is an on-site analysis and data management service which eliminates the need for expensive instrumentation or lab experience. We combine highly advanced, non-destructive, infrared technology with an easy to use interface and reporting system. Growers now have the ability to monitor critical traits in a 60-second test cycle with just one small cup of sample.

Benefits of Hop Analysis with QTA[®]

- Quickly analyze multiple parameters with a single sample
- Fast and easy-to-use with minimal training and set-up required
- QTA[®] staff handles all model validations and updates
- Non-destructive sample testing
- No sample preparation or chemical reagents needed
- 24/7 technical support

Testing Capabilities

- Alpha Acids, %
- Beta Acids, %
- Alpha-Pinene, %
- Beta-Pinene, %
- Carophyllene Oxide, %
- Caryophyllene, %
- Citral, %
- Citronellol
- Farnesene, %
- Geranyl Acetate, %
- Geraniol, %
- HSI
- Humelene, %
- Limonene
- Linalool, %
- 2-Methyl Butyl Isobutyrate
- Myrcene, %
- Nerol, %
- Total Oil, %

QUALITY TESTING IN 60 SECONDS



QTA® Testing Capabilities for Hop Analysis

| Material/Category | Trait | Range | SEP |
|----------------------|----------------------------|---------------|-------|
| Hops, Cone or Pellet | Alpha Acids, % | 2.05 - 17.95 | 0.6 |
| | Beta Acids, % | 2.9 - 7.4 | 0.3 |
| | Alpha-Pinene, % | 0.03 - 0.16 | 0.009 |
| | Beta-Pinene, % | 0.33 - 0.91 | 0.04 |
| | Carophyllene Oxide, % | 0.02 - 1.20 | 0.06 |
| | Carophyllene, % | 5.1 - 11.1 | 0.31 |
| | Citral, % | 0.38 - 3.07 | 0.19 |
| | Citronellol | 0.04 - 2.16 | 0.22 |
| | Farnesene, % | 0.05 - 6.93 | 0.73 |
| | Geranyl Acetate, % | 0.08 - 2.31 | 0.14 |
| | Geraniol, % | 0.23 - 0.99 | 0.06 |
| | HSI | 0.229 - 0.356 | 0.01 |
| | Humelene, % | 9.83 -35.62 | 1.1 |
| | Limonene | 0.1 - 0.32 | 0.012 |
| | Linalool, % | 0.42 - 0.88 | 0.04 |
| | 2-Methyl Butyl Isobutyrate | 0.15 - 3.05 | 0.19 |
| | Myrcene, % | 21.76 - 59.03 | 2.1 |
| | Nerol, % | 0.11 - 1.76 | 0.14 |
| Total Oil, % | 0.3 - 2.3 | 0.09 | |

- Contact QTA® at 1-866-yourQTA, we will design a testing package for your specific analysis needs.
- An instrument will be installed on-site and you will be able to begin using the QTA® solution immediately.
- 24/7 technical support is part of our package along with instrument training for all users, installation, validation testing, data management and model updates.