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From **BEEES** to **BIOFUEL**

BetaTec Hop Products Inc. extracts the natural compounds found within hops and discovers new applications outside of the brewing industry. The international, vertically-integrated company combines farms, processing facilities and laboratories in Europe, North America, China and Australia to create innovative, safe products with uses in sectors as wide spread as agriculture and alternative fuels.



BetaTec[®] 
hop products

Written by Robert Hoshowsky

In recent years, dwindling bee populations have been the subject of countless articles and rightfully so. To say life without bees would be difficult for humans is an understatement. It is estimated that bees pollinate a third of all the food we consume and one-sixth of about four hundred different agricultural types of flowering plant species worldwide. Without these tireless, hard-working insects, we wouldn't have most fruits and vegetables, cocoa beans, coffee, tea, sunflowers and much more.

In grade school, we were taught the basics of bee pollination: bees collect pollen from the male part of a flower – the stamen – fly to another flower or plant, and deposit that pollen on the female part, the stigma. The most important of all pollinating insects, bee pollination is also worth billions of dollars in agricultural crops around the globe.

Bees represent an integral part of our entire ecosystem. They may appear to be only tiny winged insects, but if their decline in population in recent years is allowed to continue, the effect will be nothing short of disastrous for the entire planet.

Fortunately, internationally-known and respected company BetaTec® has developed a range of safe, naturally-based products made from hops. These can be used for a wide variety of applications, ranging from fermentation to antimicrobials, renewable energy and fuels, chemicals, yeast nutrients and ethanol. The company is an application arm of the world's biggest and oldest hop company, the Barth-Haas Group, founded in 1794 and remaining family-owned after over two hundred years.

Barth-Haas is the world leader in hops production, processing, breeding, storage, logistics, research and the development of application technologies for a range of industries. The Barth-Haas Group has offices and operations in Germany, the United States, Australia, China and the United Kingdom.

When we hear the word hops, the first thing many of us think of is beer production. While hops play a key role in the flavoring and stability of beer, this is only one of the many wonderful and wide-ranging applications of *Humulus lupulus*.

"There are two assets from the hop cone," says John N. Forte, vice president of BetaTec Hop Products for the past three years, and with a long and extensive background in the food industry. "The alpha and the beta oils, and the beta oils are not prevalent for brewing applications."

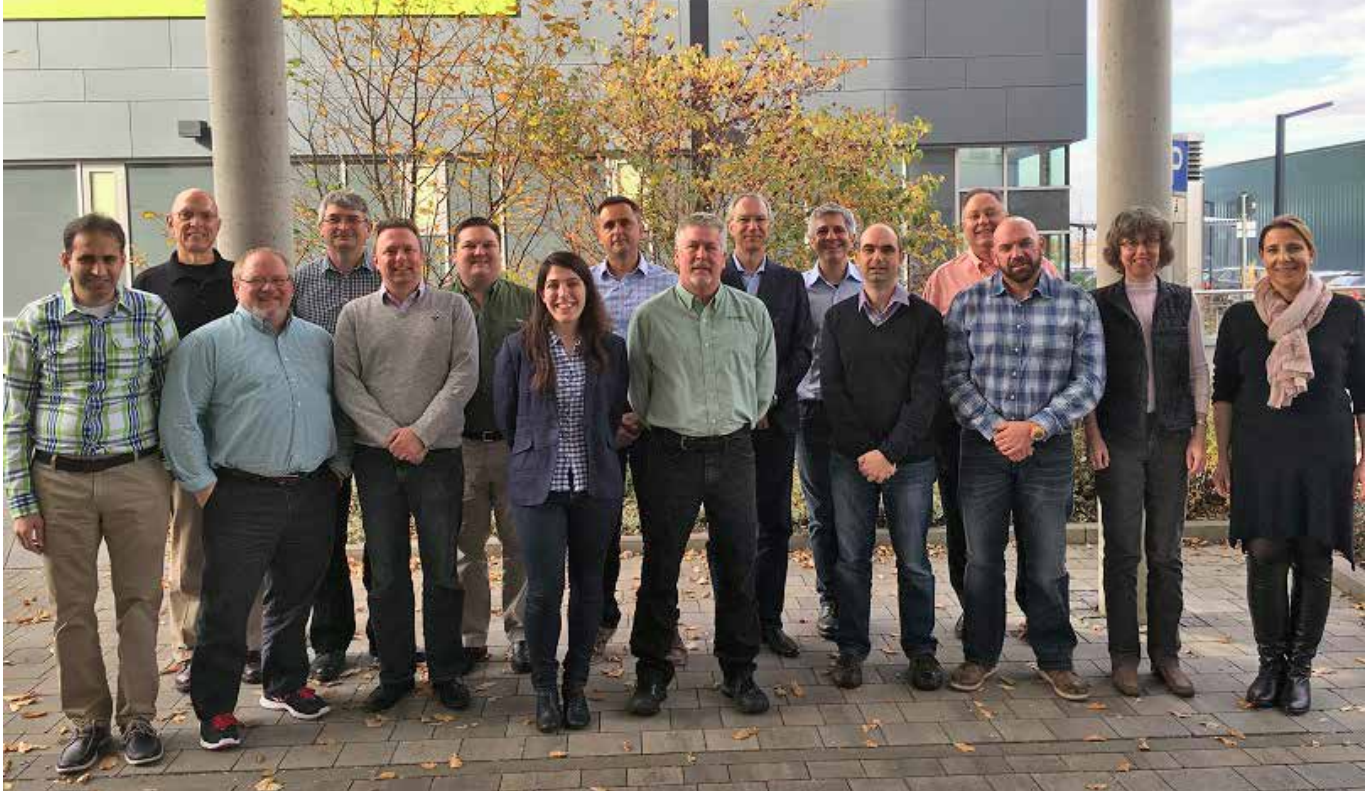


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Forte chuckles when remembering how many times he has been asked what he does for a living. When he says, "I sell hops," people often respond with comments about the beer industry. Forte explains that beer production is only one use for this wonderful flower. Another is as an antimicrobial – an agent that kills or inhibits the growth of microorganisms – a use of hops since Roman times. Others uses include as a sleep aid, in the production of renewable energy and much more.

Forte has a master's degree in international food marketing from St. Joseph's University in Philadelphia, a master of business administration from Rosemont College in Rosemont, near Philadelphia and a bachelor of arts in Hospitality Management from Roosevelt University in Chicago, Illinois. After spending many years in the food industry, Forte served earlier as vice president of PureCircle Ltd., a company focused on the natural sweetener stevia.

BetaTec Hop Products draws on the Barth-Haas Group's 222 years of experience and has benefited from the wealth of knowledge possessed by the family of companies. As the latest addition to the Barth-Haas Group, the company has benefited considerably from hop trading and processing specialists ►►



▶ John I. Haas, Inc. which was founded in 1914. U.S.-based John I. Haas owns and operates its own hop yards, extraction and pelletization plants and warehouses and remains a leader in the development of hop-based products for use inside and outside of the brewing industry.

Today, BetaTec Hop Products has grown to a team of about twenty globally. The company's experienced team includes specialists in chemistry and biochemistry, many of them holding master's or doctorate's degrees. Two of the company's locations have full chemistry and biochemistry labs.

“BetaTec offers all-natural, hop-based alternatives for these production needs, which keeps harmful products out of plants and the food chain while increasing yields.”

“The majority of staff have been with us ten years – some over fifteen years – when they were with our parent company,” says Forte. “It’s a great accomplishment for us.”



BetaTec focuses on the application of hop compounds for new and exciting industries far beyond traditional beer-making. One product is HopGuard® II, which helps combat the biggest threat to bee health worldwide, namely the Varroa mite (*Varroa destructor*). First reported in Kentucky in 1991, the Varroa mite is an external honeybee parasite which attacks the insects, sucks the blood and drains the life from them, reducing overall hive health. These mites have developed resistance to many existing control agents.

HopGuard II is a scientifically-proven and thoroughly field-tested product that is a highly-effective control system against the Varroa mite. Unlike harsh chemical



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products, it is food grade and safe not only for bees but humans. The product is easy to use by professionals and bee hobbyists alike and has no negative effects whatsoever on the development of the queen or her egg laying. "Hops have a lot of different properties in them and there are a lot of synergies with bee health in general," comments Forte.

HopGuard II is one of the company's products produced under strict regulation from agencies such as the United States Department of Agriculture (USDA) and Health Canada. "These are all products that need full vetting and licensing – something that takes years and years – and documented research," he says. "It's not 'today for tomorrow' by any means. The work and effort that went into launching a HopGuard product alone globally is a very large commitment on Beta Tec's part."

BetaTec is behind many other hop-based products. Since they are safe, naturally derived and extremely effective, the company has seen an increase in competition in recent years. "We definitely have the edge, because we've been around," comments Forte. "We are not the newcomer, and people know us in the industry. We are a company that looks for partners. We have a process that when we got to market, that is quite unique to the competition, I believe. There's a lot of testing and formulation to the process, it's not just, 'Here's the product off a truck, and good luck to you.' It's the whole service that we provide that makes the win-win for our partners."

The manufacture of sugar and ethanol may use antibiotics, chlorines and even formaldehyde – a probable human carcinogen. BetaTec offers all-natural, hop-based alternatives for these production needs, which keeps harmful products out of plants and the food chain while increasing yields.

The company's hops are grown primarily in Yakima, Washington, the North American epicenter of hop production; they are also

grown in Germany, Australia, and Tasmania under strict conditions and quality controls. This results in the company's ability to supply the demand for all-natural hops around the world.

Hop products are used to replace antibiotics in ethanol production. Although humans don't consume ethanol directly, the process affects all of us. Corn sugar is used to make ethanol, and the proteins and oils which are left over are then sent to farms and used as feed for chickens, hogs, cows and other animals raised for human consumption. Since hops provide a natural alternative to antibiotics, the development of antibiotic-resistant bacteria can be reduced in the food chain. And with an increased interest in what we eat and its source, the timing for safe hop products could not be more ideal.

"The food chain is in the ethanol plant," says Forte, "and we are able to supply them this natural alternative. Right now, it is a big buzz, because companies like Subway, McDonald's and Burger King are talking about residual antibiotics and antibiotics in the food chain. If it's not taken out of the chickens, for example, we will have it in our food chain as well. You have to back it up a lot further than feed getting to the chickens, and that is primarily how ethanol plants see things today."

BetaTec Hop Products are specialists in hops, fermentation, antimicrobials, renewable fuels, chemicals and yeast nutrients and remains active in these areas, while exploring others for the future. It also sells specialized hop products in nutraceutical applications, for purposes such as pain relief.

"Our funnel is always full of innovative projects, but what we're doing now is really focused in our five industries globally," says Forte. "We are researching our six, seventh and eighth industries, and innovation is our core, and we are always looking to innovate, not only these categories but other categories we see fit with the hop industry." ■



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