

Fresh face forward

Environmental sustainability drives Kenna Whitnell as she taps the natural power of breadfruit

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Kenna Whitnell is out to change the face of the “green” beauty industry. Pun intended.

A full-time biochemistry student with an interest in natural skin care and a sixth sense for business, Whitnell, 22, started experimenting with and making plant-based cleansers and lotions when she was in high school. In 2017, the Guelph native launched Altilis Beauty with the aim of getting the cosmetics industry – and its customers – talking about what it really means to make environmentally friendly products.

Her formula? Combine an effective plant-derived ingredient with a commitment to

Kenna Whitnell works in the lab at Altilis Beauty's Cambridge production facility.

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*“Just because it’s made with plants
doesn’t mean it’s good for the environment.”*

KENNA WHITNELL
FOUNDER OF ALTILIS BEAUTY

environmental sustainability and broader social benefits.

“Just to get people thinking about it – the easiest way is for me to get in their bathroom with a product,” says Whitnell, a fourth-year biochemistry student at the University of Guelph.

Altalis Beauty is named after the breadfruit tree – *Artocarpus altilis* in Latin – the plant at the heart of Whitnell’s growing product line.

She found a way to extract skin-benefiting chemical compounds from dried breadfruit flowers during a co-op placement at the University of British Columbia in the lab of Susan Murch, a chemistry professor and Canada Research Chair in Natural Products Chemistry.

Traditionally, the flowers are considered an agricultural waste product because they are not edible, but Whitnell used them to develop a cleanser, serum and moisturizer.

“That really pushed me toward innovation and thinking outside the box, using a crop that is more sustainable to see if there’s potential for cosmetic use,” says Whitnell, who had long ago rejected conventional drugstore cosmetics for their harsh effects on her skin.

“It turns out breadfruit is an excellent plant for that. It’s got incredible properties and really good skin benefits. It just hasn’t been taken advantage of.”

Armed with her lab findings, a team of local business mentors and funding from Innovation Guelph’s Fuel Injection

Program for startups, Whitnell wasted no time beta testing the line (on people, never animals). In less than a year, she had launched Altalis’ online store and opened a dedicated production facility.

“It’s really cool that everything has connected and collided, that my education supports my business and my business has given me an application for my schooling,” says Whitnell, who can speak as confidently and knowledgeably about a plant’s secondary metabolites as she can about business proposals. “Because I love it, it doesn’t always seem like work.”

Breadfruit flowers are rich in powerful antioxidants (the substances that can prevent or delay cell damage that ages skin) and beneficial fatty acids (which help moisturize and soothe).

Whitnell named her original line of cleansers, serums and moisturizers InflorEssence after the breadfruit flowers, or “inflorescences.” Since then, Altalis’ offerings have grown to include an extra-strength cream for eczema symptoms, a body butter and lip balm. By later this year, Whitnell also expects to launch a line of foundations and a day cream.

To ensure the highest quality and effectiveness, Whitnell sources the flowers directly from small-scale farmers in Samoa, in the South Pacific, and then transforms them into extract at Altalis’ Cambridge lab, testing each batch of product for purity and shelf stability.

The other ingredients are carefully sourced as well. The beeswax for the lip balm, for example, comes from the University of Guelph’s Honey Bee Research Centre, while the honeybush extract used in the cleanser and moisturizer comes from an organic farm in South Africa’s Cape Winelands.

“It’s important that consumers know where things are coming from and the whole process that goes into (making) an ingredient,” Whitnell says.

The various plant-derived products

come together in a facility that looks like something between a science lab and a small industrial kitchen. A long stainless-steel counter holds the essentials – two induction hot plates; some large stainless-steel stock pots; a rotary evaporator (a glass and metal contraption that turns the powdered breadfruit flowers into liquid extract by removing the food-grade ethanol solvent in which they are soaked); and a manual press to fill bottles and tubes with the finished product.

Spatulas, whisks and containers are washed out in a deep double sink. Bottles of distilled water and test tubes of coffee-coloured liquid breadfruit extract are tucked onto shelves.

It’s arguably a modest set up, but Whitnell planned it that way. There is room to grow physically and automate some production steps as demand grows. For now, it’s all made by hand in relatively small batches.

“I’m doing things the hardest way possible,” Whitnell concedes, but it’s the best way to control for adulteration and to ensure sustainability.

Olive oil is a case in point. Demand is so great that the vast majority of what we think is olive oil has actually never seen a real olive, Whitnell says. “Already we’ve put these pressures on these crops that just can’t support the demand, so they’re being cut with cheaper oils and sold under the olive oil label.”

It all serves to undermine a natural beauty product’s claims of being better for the consumer and for the planet. In other words: “Just because it’s made with plants doesn’t mean it’s good for the environment,” Whitnell says.

“I want products to be made in the most sustainable way possible, so that if it did exist on every shelf in every household, the plant could sustain that production and growth,” Whitnell says, adding that she’s willing to do the research – and even risk failing – if only to get people talking about what needs to change.

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Kenna Whitnell's process begins with dried breadfruit flowers . . .

Whitnell started making creams and cleansers when she was 14, after her first drugstore facewash caused her skin to break out. "Immediately I knew something was wrong," she says.

She made a tea using basil – which she knew had strong anti-bacterial properties – as a gentle cleanser; her skin cleared up in a week.

From there, Whitnell kept experimenting with plant-based formulas, making personalized skin-care products for friends and family with troubles like acne, eczema and rosacea. When she got to university, she launched a venture called Soleluna Cosmetics and started selling her products.

But as she learned more about environmental sustainability in the green beauty industry, she realized she had to rethink where she was sourcing ingredients for Soleluna so she could really walk the talk.

It was her search for a truly sustainable plant ingredient that led Whitnell to Murch's lab at the UBC campus in Kelowna, B.C., for her co-op placement. And it's what eventually turned into Altillis Beauty.

"I had never considered the possibility of cosmetics," says Murch from her lab in B.C. "It's a really different idea because we're focused on food."

Breadfruit is a staple crop in the Pacific whose fruits are very nutritious and used in much the same way one would use a potato, Murch explains. The trees require relatively few agricultural inputs and

start to bear fruit about two years after they've been planted. One tree can provide food for a small family for 70 to 100 years, Murch says, making breadfruit a sustainable (and non-GMO) food source.

In fact, Murch's research has helped propagate the plant in South America, Africa and the Pacific, as a way of addressing food insecurity.

Now producers are starting to see even more potential. For example, in Costa Rica, Haiti and Samoa, breadfruit is being turned into a gluten-free flour alternative, Murch says. In the Pacific and the Caribbean, small-scale producers are turning breadfruit into everything from beer to vegan cheesecake, hummus and pierogis. There's growing interest in bringing breadfruit products like these to the North American market, she adds.

Whitnell expanded on some research from 2016 that suggested breadfruit might have potential for cosmetic applications. Already, Whitnell says, the fruits, leaves, stems and heartwood of the tree have been researched for potential as insect repellent, natural

latex, and even cancer treatments. The flowers, however, fall off the branches and usually end up in compost – until now.

Whitnell found the way to isolate the most effective compound from the flowers so it could be turned into an extract for use in skin-care products.

"Kenna was an excellent guide in explaining what could be accomplished in that format," Murch says. "She has a great positive attitude and willingness to develop her ideas."

While most of her students have gone on to academic careers, Murch says, "Kenna's kind of special."

Indeed, it takes a special kind of person to balance a full course load at university with running a business. Morning classes at the university are followed by meetings in Guelph in the afternoon, and then evenings and weekends at the production facility, where she also manages co-op students who are building on her initial research.

"It's hard work and long hours and dedication and time put in," she says without a hint of exhaustion.

Stacey Curry Gunn, a partner at local public relations and marketing firm Curry Gunn & Associates, calls Whitnell's achievements so far nothing less than remarkable. "It's a testament to her organizational skills and her capacity as a young entrepreneur," says Curry Gunn, one of several mentors Whitnell worked with at Innovation Guelph.

She describes Whitnell as very coachable, a quick learner and dedicated in equal



. . . from which she extracts skin-benefiting chemical compounds.

parts to the business and to her education. Whitnell has "fantastic instincts," too, Curry Gunn adds.

Curry Gunn helped Whitnell develop and fine-tune the media relations and marketing strategies for Altillis Beauty, paying special attention to beauty bloggers – a key "micro-influencer" segment in the cosmetics industry – and zeroing in on Instagram and Facebook as the social media platforms of choice.

Along with the e-commerce site, Altillis products are available at the Gilded Cage Boutique Market in Guelph and the Eco Lifestyle Market in Toronto starting July 22. Ideally, Whitnell adds, she would like to work with a distributor to get Altillis products in stores across Canada next year.

The word that often comes up when Whitnell talks about her lab research and Altillis is "opportunity." She sees it hidden everywhere. "I really want to be a leader



Kenna Whitnell's Altillis Beauty offerings include a three-step skincare routine – cleanser, serum and moisturizer.

in the industry and show that innovation toward sustainable sourcing is possible, and there's opportunity out there that hasn't been taken advantage of," she says.

A case in point: Whitnell sees a natural extension of Altillis Beauty into helping breadfruit producers abroad scale up their manufacturing capacity to turn the dried flowers into processed compounds at the

source, thereby adding value to the primary product. She plans to get that going this year.

With help from one of Altillis' co-op students, Whitnell is also exploring opportunities to turn waste into skin-care treasure using Canadian agricultural by-products.

Perhaps not surprisingly, Whitnell fully intends to pursue a master's degree and a PhD. "I love research and I'm always going to be connected to research," she says.

But she won't leave her experiments on the bench.

"A lot of potential kind of gets left in the words with published papers and research," Whitnell says. "We think everything's already been done . . . but really there are a lot of missing links and there's a lot of potential for people to be entrepreneurs and innovators." 



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