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## Company Using Plants For Better Animal Nutrition

International animal nutrition company Nutreco has opened the Garden of the Future, a hub for its phytotechnology activities. Phytotechnology, by definition, is the use of plants to solve technical problems. Traditionally, the phytotechnology industry utilized plant extractions or synthetic chemicals.

"This approach required knowing exactly which chemical was responsible for the effect produced, and it trivialized the

power of traditional medicine," said Emma Wall, Nutreco Exploration's director of development and deployment. "What we're producing at Nutreco Exploration is always in a complex, never a single ingredient. Our phyto-complexes use the whole plant or complete plant extract, fully utilizing the amazing power of nature to help animals overcome the complex challenges they face today."

Wall explains that the approach requires

the research team to respect nature.

"These compounds are put together in plants for a reason. When you start taking them apart, you lose bioefficacy," she says. "So, we're trying to not only respect the observation of what we see in these plants, these phyto-complexes, but also respect that they're meant to be together, that there's redundancy in nature for a reason."

Many of the plants the company is working with haven't been cultivated in the past. Species are collected from around the world and evaluated. A custom AI-assisted algorithm integrates the data collected from the field with the animals' responses.

"For the first time, we can measure the response that an individual plant, containing hundreds of specialized metabolites, triggers in a target animal," says Dr. Bernd Bütter, Nutreco Phytotechnology Program director. "For my work, it means that we can compare the response to individual plants, rank them and select the best."

All of Nutreco's phytotechnology activity, from discovery and experimental cultivation to plant development and production, will be contained in the Garden of the Future hub.

The phyto-complex development will accelerate significantly with the new facility. It includes a 5,400-sq. ft. experimental greenhouse for plant breeding and propagation. It also includes nearly 6,000 sq. yards of greenhouse for mass propagation and about 74 acres for open-air crop cultivation. A special Future Garden will display the facility's novel plants.

While the new hub is important, phyto-complex development is well underway. According to David Bravo, Nutreco's chief science officer, the company has already introduced four phyto-complex products and has 17 more in its new product pipeline.

"So far, we've collected around 450 unique plant material samples and are performing field trials and production in seven countries," he says.

The samples are tested and evaluated for their impact on animal nutrition. As nutritional challenges are addressed for a new product, the research team looks to the library of samples for possible phyto-complex solutions. Several products with such additives are being tested for methane reduction in cattle. A new product already introduced can help with dairy cow metabolic flexibility.

"Farmers can be assured that all our new products from the garden plants undergo vigorous testing, at least 5 or 10 times in different conditions around the world, before being put on the market," says Bravo.

While the Garden of the Future is located in Switzerland, Nutreco is headquartered in the Netherlands. Nutreco companies include Trouw Nutrition (animal nutrition) and Skretting (aquaculture nutrition).

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## Leather Alternative Expands Uses

BioThane Coated Webbing Corporation started by offering an alternative to leather for tack, halters, bridles and harnesses in the equine industry.

Founded in 1977 by a group of B.F. Goodrich Tire Company workers, BioThane initially addressed the horse and harness racing industry's demands. Today, the company's product line has expanded into all corners of the pet and equine sectors. In addition, it's making inroads into the human medical field, producing belts, patient restraints, lifting devices and shoulder straps for equipment bags. The leather alternative also services the trade safety industry, manufacturing fall protection harnesses, decontamination belts, climbing straps and lanyards.

BioThane's unique coated webbing products come in numerous color choices and are made from strong thermoplastic polyurethane (TPU) and polyvinyl chloride (PVC). The TPU coating is ideal for areas

with higher resistance points, while the PVC sports the comfortable feel of leather.

"Our reins, harnesses and dog collars look like leather but don't need the maintenance or oiling," says Kim Madjar, BioThane's director of sales and marketing for the animal and distribution markets. "Just spray it and wipe it clean with soap and water."

Madjar explains that BioThane webbing offers optimal consistency compared to leather, as animal hides often vary slightly from cow to cow. She believes the leather alternative is longer-lasting and more cost-reliable due to fluctuations in the leather market.

"Our goods are extremely diverse," she says. "For anyone who wants a durable, easy-to-clean and waterproof product that's an alternative to leather, it's a great fit. There's always a place for leather, but there's also a place for BioThane."

BioThane-coated webbing is manufactured in Ohio and is available worldwide from nu-



"Our reins, harnesses and dog collars look like leather but don't need the maintenance or oiling," says Madjar.

merous distributors and dealers. All products must meet strict safety and strength standards.

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"We need to look at plants as potential forage rather than weeds. Even multiflora rose can provide health benefits," says Kincaid.



## Making Cover Crops Profitable With Cattle

Cover crops pay off in multiple ways for Macauley Kincaid. He grazes them with his cattle herd. They improve his soil health, and he harvests their seed for his own use and to sell to other farmers.

"It all goes hand in hand," says Kincaid. "I

needed a way to have a return on investment with cover crops. The best way to turn covers into cash is with cattle."

Letting cover crops go to seed and harvesting them to replant also brought multiple returns. Each year, the harvested seed was

better suited for Kincaid's soils and environment.

"The seeds' epigenetics developed for our area," says Kincaid. "Annual seeds adapt rapidly to the local environment."

As other farmers noticed, he began harvesting more seed and selling it.

"Seed sales have spread by word of mouth," says Kincaid. "Three years ago, our seed went on 50,000 acres within 100 miles of our place."

Kincaid recommends particular cover crop mixes that will meet the farmer's individual needs. He raises a wide variety of cereals, legumes, brassica and more. Everything from pumpkins to pearl millet, cowpeas and triticale, as well as wheat, barley and rye are on his list.

"Each cover crop does different things for an operation," he says. "We try to never raise a monoculture. One may not do well with the weather in a given year, but another in the mix will have your back."

Kincaid promotes multiple species cover crops to his customers.

"This year, 60 to 70% of our sales are mixes of multiple cover crops," he says.

With all but his largest field fenced, Kincaid can graze nearly all of his cover crops not grown out for seed. He credits the cover crops, along with carefully selected genetics, for the success of raising his herd without any

purchased minerals or supplements.

"Our herd gets by on forage alone," says Kincaid. "I've documented them eating what others consider undesirable species, such as Canada thistle. It's high in iodine, and they'll seek it out."

Kincaid notes that the same holds for milkweed and even poison hemlock.

"I haven't lost an animal yet," he says. "We need to look at plants as potential forage rather than weeds. Even multiflora rose can provide health benefits."

Kincaid doesn't recommend that others simply cut out mineral inputs. As he developed his system and herd genetics, he culled off any that did not do well. Additionally, his intensive grazing system rotates his 55 cows (plus calves) daily, or even multiple times a day. Today, his herd genetics, like his cover crops, are finding a market.

"Although I keep back my heifers as replacement stock, I have started selling some bulls," he says.

Currently, Kincaid is working with the University of Missouri on the use of electronic collars to limit access to forage. If successful, it will enable the grazing of cover crops and crop residue without the expense of fencing.

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