

BITS establishment

FOR EXTERNAL USE

Circular Insect Proteins spiralling upwards. A Joint Venture between Protix and Buhler for global acceleration.

January 2016 - Protix has established a Joint Venture with Buhler in order to accelerate the global roll-out of insect production assets.

Over the last 7 years Protix has invested effortlessly in upcoming insect industry. As the first company with significant investments and a full-scale facility in the Netherlands it was at the forefront of defining this new livestock business. Protix has initiated and founded the IPIFF (International Producers of Insects for Feed and Food) which is now the leading association for insect producers.

The insect industry holds great potential to become a serious new agricultural production industry and has all the right cards to follow-up on its promises. Insects are truly the ugly duckling turning into a swan. The underestimated force of Nature coming for the rescue and it has the science to back it up. With the highly efficient conversions the industry could even provide all animals in the world with proteins if it would convert all the organic by-products and waste in the world. If a city of 5 million would convert its food waste through insects, it could re-feed 1 million of their people with nutritional proteins. That would massively reduce a city's footprint and Insects can create a more natural food system while reducing its footprint.

Over the last years Protix has been awarded with several grants, prizes and honours. Among which the Technology Pioneer award by the World Economic Forum. Following the award, Kees Aarts, founder and CEO, has also taken seat in the Global Council on Food Security and Agriculture at the WEF, contributing at the highest level. And it's needed. The food system is in dire straits. Potentially the era of cheap food is over and resource inefficient consumption is simply no longer possible. We need help from all creatures, big and small and insects can be part of the solution we direly need.

As with any industry these days, solutions don't come easy and without technology solutions rarely last long. That has been the focus from day one for the talented people at Protix. From the first day onwards, the focus has been on producing smartly and Protix has developed the right systems, principles, equipment and technologies to do that. And it has come a long way. In 2009 the industry was simply not there. There were some people breeding insects, but not an industry. Everything had to be invented, tried, tested, built and destroyed to do it all over again. Currently Protix is running an insect breeding program in 100% controlled environments. It has fully automated rearing solutions and fully operational pre- and post-processing lines. On top of that it has developed its own climate solutions and software systems for continuous improvement programs. Protix also invests in A.I. which it has running

on the interface between young larvae and the grow-out phase. Most importantly, Protix has been producing high-quality ingredients for their most important believers, their customers. Protix has delivered several successful introductions over the last years. In the Petfood they introduced hypo-allergenic dogfood with Trovet. In piglet diets they introduced our lipids as an antimicrobial additive with Coppens Diervoeding. On top of that Protix has introduced wet petfood and the most sustainable and tasty egg in the supermarket, the Oeregg. Also the first trout fillets fed with insects were cooked on stage with 100s Michelin star chefs and presented as the future of aquaculture. Through these introductions it has shown the ability to commercialize in collaboration with customers all the way to the end customers. From these introductions we see a strong market pull for more product. The demand for insect based proteins is therefore growing rapidly.

Since the industry will be (much) bigger than Protix, it has formed a Joint Venture with Buhler to accelerate the industry as a whole and commercialize insect rearing and processing solutions. With some careful assumptions it is imaginable that there is a market for 100s of insect production facilities to be built every year in the coming decades. This potentially steep growth curve can only be supported by the right infrastructure and resources with a global coverage. Obviously it would take Protix too long to do it by themselves. That's where Buhler came in. They had already tested the water in this new industry. They have evaluated where the fastest growth would be and how to take a leadership position within. We are very proud that they identified us as the right scaling partner for their new business. For us it is the ideal platform and a means to provide in the needs by many potential customers and clients that approached us over the last years. A Joint Venture was soon thought off by both sides. The Joint Venture will be established by Buhler who will drive the business of offering technology solutions for insect rearing and processing. It will start serving insect operators and producers from today onwards. Significant investments are part of the deal to ensure enough people and means are in place to build many assets all over the world for customers. Already a team of 35 highly experienced and talented people are at work. As of the first day of establishment, the Joint Venture already has a significant backlog of projects with more conversations on the way.

Protix Ingredients™ will keep investing in its own production facilities and further develop its breed stock quality and digital services. Buhler will drive the engineering solutions business and ensure that the customers of our Joint Venture can produce safely, hygienically and cost effective.

The Joint Venture: Buhler Insect Technology Solutions

Buhler and Protix have identified a strong growth market for professional insect based rearing and processing solutions. Through the modularization and standardization of technologies customers can be provided with total solutions. We have a broad portfolio of customers currently lining up among which players in the food space and city management. The modularity of the solutions enable fast time-to-market with insect based ingredients for the operating companies and production consortia.

The Joint Venture is established with significant investments. A top team of engineers and experienced professionals is put in place including over 25 engineering to jump-start the business of offering total solutions.

Buhler in short

Buhler is the world leading food and agricultural food processing solutions company. It serves all the major food and feed processing players and has formulated a long-term protein strategy.

What this means for you

Both Protix and Buhler have had many requests over the last years. If you are a feed company, food processor, agricultural conglomerate, city planner, waste company, asset operator or agricultural investor and you are interested in converting your by-/ co-products or organic waste into natural, fresh, high-quality and low-footprint insect protein, please contact us. We will build it for you, support you in the operations and help you feed the planet naturally and sustainably.

Protix in short

Protix produces and sells high-quality insect based ingredients for the specialty feed, aquaculture, petfood and food market. It has developed scalable, controllable and viable production systems. It has invested continuously in people, tech and standards to enable the global acceleration of this promising new source of low-footprint proteins. It is operating the first in the world production facility that produces at the highest certified standards.

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CEO interview Protix, Kees Aarts on Insects and BITS

Why do you believe insects hold the future?

That's easy. The first reason is that sir. David Attenborough showed the world the formidable force insects are in the documentary Life in the Undergrowth. And to me all what he says makes sense. The second reasons is simply a natural principle. Nearly all young animals like fish, birds, reptiles and mammals eat insects, especially when they are young and need excellent nutrition. That's common sense in its purest form. And we're not giving it to our young animals in our livestock system. Why is that? Let's solve that to ensure a better future for all our animals. Simply give what they need.

Why this Joint Venture?

Protix has invested deep in technologies and operational principles that allow safe and hygienic production of insects at affordable prices. We have built an army of dedicated people that continuously improve all we do based on our seamlessly integrated data and software structure. The question is how to scale. And the answer can only be given from an industry perspective, not from a company perspective. The Joint Venture is the answer to the question on how to scale aggressively.

Why a Joint Venture with Buhler?

That's like asking a fish why it likes to swim. Buhler is the world leading food and agricultural food processing solutions company. Buhler has defined the milling industry 160 years ago and it wishes to define the insect industry for the next 160 years. Over the last years we have accumulated over 350 business requests for products, solutions, partnerships, technologies and equipment. We have had a very hard time to serve all of them. We are consistently limited by resources, and that is solved now. The global infrastructure can truly accelerate the industry as a whole and spiral this novel protein source upwards. And for me personally it's yet another perfect circle. My grandfather was a miller and we even have an old milling stone as a fireplace in my elderly home. Starting Protix and now taking the next step with the definition of milling is full circle.

How big can this industry become?

My view on the insect industry is that it holds the same potential as the aquaculture industry. That was also an entire family of species we moved to more controllable environments to provide good foods while lowering the pressure on natural systems. Although not always well executed, the growth was formidable over the last 40 years. Insects are still livestock and a complete infrastructure needs to be put in place. When done right with the right people and investments, the industry can grow to a 20 billion industry by 2035 and even more ambitious to 100 billion by 2045. The interesting thing about the insect industry is that it can serve and complement nearly all other industries from an ingredient perspective. And all while lowering the footprint and moving to a sustainable food system. Those are quite some strong forces aligned in the right direction.

There are many other insect companies growing fast and attracting large investments. What is your view on their development and how do you position yourself to them?

I've talked about this in some previous interviews. I believe all my esteemed colleagues are doing amazing stuff. Obviously I don't get to hear about all the cool stuff that happens at their facilities and R&D departments. That's due to healthy competition, but as an engineer I'm curious and I can only imagine and dream about all the cool stuff that happens where people are working relentlessly and investing in insects.

So, with the industry perspective in mind, I can only hope that all which is said and advocated comes true and I simply wish great success for every one of them. And I know how hard it is to follow-up on promises when you want to create a total new industry out of thin air.

What will Protix do next?

Ah, good question. It only just started. Compared to the next 7 years, the last few years will look like a walk in the park. The real task has only just begun and we're rolling up our sleeves to advance accordingly. We will first further expand our Dutch asset base with a new flagship production facility which stands model for an entire new production chain within our Ingredients business. We will ensure the standards of operations and product quality will even be moved yet another level. We will keep innovating with our customers into new niche market segments. Our focus is to establish a long awaited level of reliability for our customers. Ability to always deliver at the right quality and price. And that's not easy in a fast growing market.

We will further develop our Breed technology an operations and deepen our genetic improvement program. We will advance with our data intelligence through software development and A.I. for insect production and continuous improvement.

On top of that we always have the X in Protix. The moonshots and big ideas coming from the smallest of creatures. There are nice things on the horizon.