



Case Study

Vemiwa Relies on Coperion Technology for Manufacturing High-Quality Plant-Based Food Products

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Regional, sustainable, and highest quality: Start-up Vemiwa Foods GmbH in Königsbrunn, Germany, produces plant-based food products according to these quality parameters and relies on Coperion technology to achieve them. Using the Coperion ZSK 43 Mv PLUS food extruder in hybrid version and Coperion K-Tron feeders, Vemiwa manufactures vegan meat substitutes (HMMA – High Moisture Meat Analogues) such as chunks, pulled varieties, and mince in a wet extrusion process.

With his own roots in a family of traditional butchers, Vemiwa founder Michael Walk Jr. aims to thrill customers with flavor, quality and innovation in plant-based alternative products using no artificial additives, colors, or aromas, and instead using only natural seasonings and favoring regional proteins.



The ZSK 43 Mv PLUS food extruder, together with Coperion K-Tron feeders, offers great flexibility in production. (Photo: Vemiwa Foods GmbH, Königsbrunn/Germany)

Currently, Vemiwa uses legumes such as peas and fava beans as protein sources but is also experimenting with other sources and their compositions. Ever on the hunt for suitable, allergen-free sources of protein bases, the company researches, develops, and produces new and innovative plant-based products using the Coperion ZSK extrusion system. Vemiwa also offers white labeling and commission extrusion to provide other companies access to the market for plant-based products. High flexibility as well as high end product quality are thus important demands upon the extrusion system.

Know-How and Technology Are Key

The search for the right equipment supplier led Vemiwa to Coperion. With the hybrid-version ZSK 43 Mv PLUS food extruder, Coperion offers the ideal technical solution for manufacturing qualitatively high-value end products. In HMMA production, the extruder achieves throughputs of up to 250 kg/h and speeds of up to $1,800 \text{ min}^{-1}$. The increased energy input makes breakdown of the proteins in the process easier, thus providing greater product design flexibility. The deeply cut screw flights with a diameter ratio of D_a/D_i of 1.8 create a very large free volume which significantly improves, for example, the intake of protein powders that typically flow with great difficulty.



With the Coperion extrusion system, Vemiwa produces high quality vegetable meat substitutes without artificial additives. (Photo: Vemiwa Foods GmbH, Königsbrunn/Germany)

Moreover, the process section's modular design results in the greatest possible flexibility. Recipe changes and modifications can be implemented quickly by simply changing the screw configurations and the process configuration. The highly accurate and reliable Coperion K-Tron feeders for adding protein powder

and liquids into the process, together with the extruder, ensure the highest HMMA product quality and tremendous flexibility in production. Comprehensive expertise provides seamless integration of each technology and component into the production process.

Along with the technology and high flexibility of the system, the extensive know-how demonstrated by the process technicians during the frequent interactions with them was key to Vemiwa's decision to use Coperion. "It's our goal to offer natural products that taste good. At Coperion, we've had a personal fit and a good feeling from the outset. With this system, we are very flexible, and we can easily try out new recipes or products; this means we can expand our selection further, as well as how we offer extrusion on commission. Our Coperion contacts continue to support us in fully exploiting the ZSK extrusion system's possibilities so that we can continually develop", said Venima founder Michael Walk Jr.

The interplay of high-quality technology, reliability and expertise makes Coperion stand out. Moreover, the system enables great added value depth in commission extrusion. The development and production of various types and quantities of products is easily accomplished on one machine with little effort required — from semi-finished plant products to various vegan and vegetarian end products.