

Summer sizzlers: think wheat not meat

Why plant-based barbecue classics will be hot stuff this year

According to Statista, sales of meat alternatives will continue to soar, reaching around 140 billion US dollars by 2030. Driving such demand are an ever-increasing number of flexitarians who eat meat, yet also supplement their diet with plant-based products. However, in order for them to be totally convincing, the right vegetable base is crucial, as is authentic mouthfeel and taste. Ingredients specialist Loryma has developed combinations of wheat textures and binding components made from wheat that can be used to create plant-based versions of grilled classics such as steaks, sausages, burger patties and fish fillets, as well as new creations.

Everyone looks forward to a barbecue in the summer, as it's the perfect opportunity to spend quality time with family and friends, eating and chatting in the sunshine. Yet outdoor cooking is no longer the mighty meatfest it once was, as more and more people seek out vegetarian and plant-based alternatives to grace their grills. Flexitarians wanting to consume less meat, usually as a result of animal welfare and environmental concerns, are a demanding clientele, says Norbert Klein, Head of Product Development at Loryma: "Barbecuing is associated with a positive attitude to life, so giving up meat should not be at the expense of pleasure." For this reason, he and his team at the Zwingenberg site near Frankfurt (Germany) have developed a variety of inspirational application concepts, utilising the outstanding technological functionality of wheat as a raw material, for the creation of outstanding meat-alternative products.

Taste and texture perfectly replicated

In terms of technical advantages, extruded wheat gluten forms fibres that, in contrast to soy or pea protein, have a higher elasticity and therefore convincingly replicate the feel and texture of meat. Loryma has been concentrating on this raw material for over 40 years and is not only active as a supplier to the food industry, but also continually develops new application concepts based on its extensive ingredients portfolio. In terms of flavour, which is undoubtedly a key factor in consumer purchasing decisions, there are no restrictions. The basis for "grillable" meat

alternatives are extruded wheat proteins and wheat-based binding components, which are neutral in taste and smell. This gives manufacturers the opportunity to individually flavour or aromatise their products, all of which can be produced using standard meat processing equipment. As a result, the creation of various meatless sausage specialities, for example chipolata or merguez, is possible.

Ultimate flexibility

In recent years, extruded ingredients have emerged as a key element in the production of meat substitutes. Extrusion describes a process in which a raw material, for example in the form of cereal flour, is formed using heat and pressure from screw conveyors, and forced through a die. The extrudate that emerges is then cut to the desired length. The result is unparalleled product properties that can be influenced by composition and gluten content. Furthermore, when hydrated, the fibre structure that develops is incredibly similar to that of meat.

Whether it's replicating grown muscle meat or ground mince, the great advantage of the extrusion process is the flexibility of both the design and desired properties. Long, light strips imitate a chicken breast, for example, which can be marinated or, using a special coating system, given a plant-based "chicken skin" that becomes crispy when grilled. As well as uncoloured wheat textures, darker versions are also available. Coloured with natural malt extract, a light brown version is reminiscent of "cooked pork", while a sugar caramel colouring can be used to replicate the appearance of "cooked beef". For other plant-based applications, smaller extrudates are more suitable; extruded granulates, for example, are suitable for fine white or coarse sausages. As a dry product, the texturates can be transported unrefrigerated, easily stored and individually rehydrated.

Fish alternatives on the rise

Thanks to the individual addition of water, there is also scope for varying texture, as the degree of hydration determines the bite strength. For a typical American "home-style" burger patty, not only can different shapes and sizes be combined, but also firmer and softer ones. An authentic replica of the original animal products is achieved by combining the texturates with the appropriate functional mixture of wheat gluten and starches. The choice of binding system depends in each



case on the processing procedures, and desired product properties. The correct binding of the meat and its adhesion to the sausage casing are essential quality characteristics. The typical mouthfeel is created by the plant-based casing and vegetable sausage meat bonding optimally, and irreversibly, with each other.

Concerns surrounding overfished oceans mean plant-based fish alternatives are gaining in importance too. Segmented fish muscle meat can also be imitated with the help of a specially adapted mixture of wheat proteins and starches.

Outlook

With an ever-increasing world population and growing need for more sustainable foods, plant proteins will continue to play an important role for years to come. Wheat as a raw material scores highly thanks to its multifunctionality and regionality: Almost 99 per cent of each grain can be recycled through the production of co-products, thus ensuring a resource-saving approach to the environment. Loryma processes only European wheat, which minimises both transport emissions and the risk of supply bottlenecks. The use of wheat-based ingredients is another step towards future-oriented end products that encourage consumers to make repeat purchases. So roll on summer and let's bring out the barbie!

