

# Flexible production lines for successful fresh meat portioning

The margins of portioned fresh meat for discounters are under pressure. Quality, low prices and product diversity are increasingly demanded. To meet these challenges it is essential to have the process-optimised and, at the same time, enormously flexible product lines. These lines should have a highly efficient portioning technique that guarantees an optimal yield of the raw meat.

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About 60 years ago meat was both a rare and a luxury item, whereas today nearly everybody in the western world can afford to consume any kind of meat. In Europe meat consumption has quadrupled compared to the 1960s.

After years of growth it seems as if the share of fresh meat for discounters has reached its critical stage. No essential increases are to be expected in the near future. Retail beats down prices. In addition, the prices for energy, forage and labour costs are going up. Also the shorter listing spans in supermarkets seem to be a major problem.

In the pork and beef sector each company has to develop strategies to survive the strong competition,

while simultaneously keeping its margins. The following criteria are essential for the producer.

## Quality of the final product

Quality is the main criterion for the consumer's buying decision. Together with the cutting and stacking image, which should strongly appeal to the customer, an even form of the slices is most important.

The thickness of the slices with parallel cut is particularly fundamental. This guarantees a constant cooking time, especially when people are fond of 'quick and easy meals'.

This makes it a suitable product for the consumer. Only first rate quality can ensure steady sales of meat products.

## Product variety

Today, consumers demand many different pieces of meat, readily portioned and in the preferred quantity. Supermarkets are aware of the problem and have responded. They all offer a wide range of cuts and weights in all variations.

The big supermarkets like Tesco, Asda, Sainsbury's, Morrison's, Aldi or Lidl offer a huge variety of boneless steaks, bone-in chops, dices as well as seasonal products.

Today's producers have to be able

to cover almost the complete product range desired by the consumer.

## Optimising the yield

As already mentioned, quality and flexibility secure sales and help in production planning. But the main criterion for distribution of your products to the supermarkets is the sales price.

For several years this is a rather depending market and prices are mainly set and given by the supermarkets. To cope with these prices the main adjusting wheel is optimising product yield.

This has an equally massive and direct influence on the cost structure. Raw materials account for around 70% of the costs of a producer, while personnel, administration and distribution costs amount to only 30%.

In view of the large production quantities involved, the cutting process can have a critical influence on the costing for the whole production lines. Improving the yield by 2-3% can boost returns significantly and generate short payback rates for the equipment.

## Fixed weight packaging

There is a strong trend towards fixed weight packages. This allows uncomplicated pricing and an easy price comparison for consumers. Fixed weight packages make it easy to announce special offers too.

Here the challenges for the producers are an optimised weight accuracy in slicing to avoid any unpaid overweight ('give-away') in the packages.

## Special offers

There is also a very challenging trend to attract consumers by forcing special offers. This often leads



TVI's FPS 500 line covers the complete portioning process.

to tremendously increasing volumes on the advertised products, easily up to 200 or 400% of the normal daily volume, whereas the volumes on the other daily products are often reduced accordingly.

The main challenge in those varying volumes is not the maximised total output capacity on specialised single-product machines but rather the flexibility of all existing production lines.

Am I also able to produce the same product on other lines but still with the same quality and for the same price? If this question could be answered with yes, then a second great benefit is the reliability of the production facility.

There would be redundancy in the production capacities and so, even break-downs of single machines could be covered by other lines, being flexible to cope with the same product on the same quality and yield.

## Shelf life

The consumer's expectations for a long lasting shelf life are also pushing the producers to optimise their production process.

Beside proper cleaning and sanitation rules, the main process criteria for an optimised shelf life are shortest handling times, minimised man-





ual contacts, a consistent cooling chain and securing of the product flow ('first-in first-out').

The time span from the portioning of the raw meat up to the sealing of the packaging should be considerably short.

Accordingly, complicated sorting systems which follow the portioning machine are a thing of the past and do not meet today's requirements.

Also a brief surface crust freezing of the raw material just before slicing helps a lot for securing best package shelf life.

The crust freezing does not just improve the cutting quality (with clear slice edges and no ripped-off fibres even on high production speed), it also improves shelf life and cooling chain handling. The surface of the crust frozen meat is dry.

So, with cutting you multiply the surface of your primal but with a dry surface the danger of bacterial contamination is considerably lower.

The small crust also helps to ensure the low temperature in your trays, so that products are ready for delivery just after sealing.

There is no need of extra cooling and storage time to ensure the cor-

rect delivery temperatures that are appropriate for the supply chain of the supermarkets.

### Today's production lines

The portioning machine as core of the whole process line is therefore crucial for the cost-effectiveness and the economic success of the complete product line.

The portioning itself finally determines the quality, efficiency and profit of the packed final product.

In other words, deficits in the cutting process can never be compensated during the successive process and will so inevitably reduce profit.

In order to cope with all the daily occurring challenges, it is inevitable to have flexible production lines.

Modern lines start with a brief surface crust freezing of the raw meat and end with the fully packed portion into a tray that has been chosen by the customer.

After the crust freezing of the meat pieces the actual portioning process starts. During this process, the meat gets formed to optimise yield and is then cut to order.

Following this, the portions need to be shingled, loaded to tray, quality and weight checked before they are finally sealed.

To fulfil the previously introduced flexibility such a line should be capable of producing all products required by the supermarkets. Product changes must be realised in very short times.

With such a flexible line producers will be able to react to the occurring big sales fluctuations. A

perfect example for such a line is the FPS500, developed by TVI.

This line covers the complete portioning process. Alternately, the operator fills the freezer and puts the crusted meat into the GMS 500 portioning machine.

This machine is able to cut almost any product, whether it is bone-in chops, boneless steaks, thin sizzle steaks, roast, filets, medallions, cubes or strips, always at the best yield figures and with the best cutting quality.

By choosing the corresponding program the portions are transported to a conveyor belt, either individually or shingled. From there

the portions are put into the desired trays. This can happen either manually or automatically.

The filled trays are weighed and then compared with the set weight.

Portions that do not fulfil the set weight will automatically be pushed into the rework area where they can be corrected very quickly and ergonomically. Trays with the correct weight go directly into the packaging machine. Such a line requires only 2-3 operators.

Many international producers demand a competent partner to cope with their daily challenges. Almost all of these producers rely on TVI equipment. ■

## Market leaders in meat portioning

TVI is a market leader in the retail food sector for meat portioning. Their headquarters and production site are located in Germany near Munich. Thomas Völkl is the founder of TVI. He invented volumetric portioning in the food industry in 1999. This technology is the basis of all portioning machines of TVI. A few years after TVI had been founded, they began to work on technical solutions beyond the slicing process. Today TVI can supply complete lines starting with meat freezing to cutting, shingling, inlaying, check weighing, weight correction and feeding a packaging machine.

TVI delivers high tech and the best quality machines to cut meat in any condition and shape. With its own development and engineering department, TVI can react very fast to customers' requirements. TVI manufactures standard machines as well as customised solutions. The customers benefit from the fine quality, the high yield, low manpower and the excellent service of TVI. The philosophy of TVI is to develop and produce innovative and reliable portioning equipment for the meat industry. Together with their customers they set the benchmark for the market to deliver the best quality with the minimum of production costs. In fact they increase customer yield, realise very flexible applications with high automation and low energy costs.

### Generating highest yield and slice quality.



**Round muscle.**



**Ideally formed.**

