

## Slaughter Planning

The planning module for slaughtering provides each user with a quick and true overview of the status of production and allows the planner to plan production in a way that:

- Ensures that orders are delivered on time
- Guarantees optimum utilisation of raw materials
- Ensures optimum utilisation of production capacities
- Optimises the disposal of surplus stocks in relation to alternative prices

As we have seen, slaughtering and meat-processing are very different processes with regard to calculation. This also applies to planning.

Process planning is in many ways traditional and well-known from many other industries, but things are complicated when one or several processes from slaughtering are involved.

Slaughtering differs from meat-processing in that the production of a principal product, for example ham, results in a series of secondary products that must be used internally or sold externally.

The NAVI Meat planning module for slaughtering can be used either within one of the areas or in a combination of both. If the planning module is used for both areas, NAVI Meat contains a number of interrelations and features that secure the best possible planning. This document, however, only deals with slaughter planning.

### Basis of planning

Production planning is often a very complicated task which involves a number of considerations. NAVI Meat takes the following factors as a starting point:

- Raw material supply
- Current stock status
- Purchase orders
- Sales orders

One of the most powerful features of the NAVI Meat planning module is the integration of data. This creates a logical coherence in the product flow, from one process to the other where the output from one process provides the input for the next:

- Slaughtering
- Primal cutting
- Deboning
- Main products

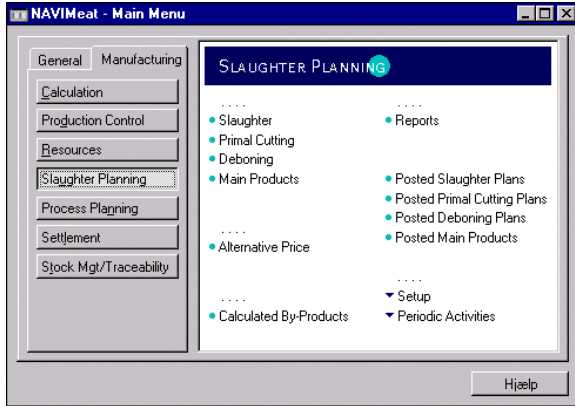
Thanks to the integration of the various modules and functions, information only has to be registered once to make it available throughout the system. This concerns administration as well as production.

### Slaughtering

Planning the slaughtering presupposes that the capacities of the business are defined and described. For each slaughter line a standard week is defined with a specification of available hours. In cases where a slaughter line increases or decreases its capacity, this can be defined for specific weeks. If necessary, other time units can be defined.

After this, the maximum number of animals that can be processed by each slaughter line per time unit is defined. The species are also specified at the livestock level where an average load per hour is defined. Finally, a primary slaughter line may be assigned to each type of livestock.

When these definitions have been recorded, the system will always determine the best route through



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the slaughtering process, starting with the primary slaughter line, and will subsequently attempt to fill up other permitted slaughter lines.

The planning of slaughtering is made in a so-called “trendscape” and may thus be made for several time dimensions: day, week, month, quarter or year.

Viewed separately, the planning of slaughtering is highly push-oriented as it is the aim to slaughter the intake of animals in the best possible way under the given capacity limitations.

The results of the slaughtering are then transferred to the next planning stage: Primal cutting. At this stage it is possible to include a delay factor covering the time between the slaughtering and the time when the carcass is actually ready for primal cutting. This could, for instance, be one day for pigs and several days/weeks for cattle.

### Cutting and deboning

In the system, the planning of the primary cutting and deboning takes place in two stages – though they are based largely on the same principles. Both processes are based on the availability of resources in the respective production sections. The processes differ from slaughtering (where the slaughtering line is the limiting factor) in that they require a higher degree of availability and efficiency of human resources.

Therefore, the planner defines a standard week of available capacity for each category. This capacity may be continuously adjusted to reflect the number of absentees and the efficiency among the human resources.

When the planning module for slaughtering is set up, theoretical distributions for cutting and debon-

ing for each category are defined. This is to give the planner an idea of the main product/raw materials situation if a planned production is carried out, i.e. which parts are transferred as main products from slaughtering to further slaughtering, to cutting and deboning and, finally, to further processing of the main products.

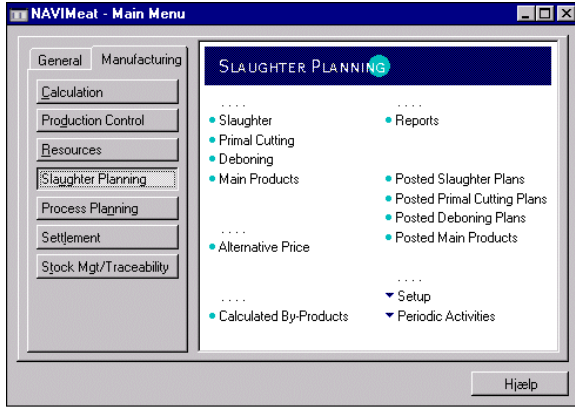
For example, a slaughtered pig that is run through the primal cutting will often result in two of each part piece. Thus, the planner will always have an updated, accurate view of the raw material supply expected from other production sections in the preceding stages of the slaughtering process.

Just as the planner can obtain an overall view of the supply of the different parts, so will the planner be able to see to which extent the production plan satisfies the customers’ delivery requirements, and, at the same time, he will be able to include internal production orders from other production sections in the planning.

### The optimisation point of planning

The most difficult planning decision concerns the determination of the optimisation point. If the company engages in both slaughtering and processing, it has to deal with a push-factor in the form of registered animals and pull-factors in the form of sales orders, sales forecasts and a limited product shelf-life.

In these cases NAVI meat uses a procedure which takes the slaughtering, deboning and cutting plans as a starting point for further actions. The logic behind this procedure is that, in this phase of the production, the best possible planning for the principal products, which fetch a relatively higher price per kilo than the secondary products, is crucial to the overall profitability of the production plans.



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### Calculating the generation of by-products

In cases where the company engages in several processes in the slaughtering phase, the module offers a unique feature, which, on the basis of approved plans, calculates the generation of by-products resulting from the implementation of a given production.

This calculation is based on the standard distributions defined for cutting and deboning as well as on the standard yields of the individual recipes. Therefore, the result is a theoretical indication of the generation of by-products resulting from the implementation of a specific type of cutting/deboning based on previously defined specific recipes.

As a result, the planner will always have an updated and true overview of the estimated raw materials supply in the form of by-products from preceding production sections, and thus he can easily plan the disposal of these.

### Simulating and correcting the planning

All production plans in NAVI Meat can be simulated and adjusted prior to final approval. Likewise, production plans may be continuously corrected in case of changes in the preconditions such as changes in the resource supply or changes in customer orders.

### Alternative price

When the planning for the coming week has been approved, it is often necessary to dispose of a raw materials stock or to purchase more raw materials.

When surplus stock is to be disposed of, the question is which product mix will yield the highest profit for the company. Is it better to sell without further processing or should the materials be processed according to a specific recipe?

This question can be answered in NAVI Meat by calculating an alternative price. This price is an expression of the best possible sales yield of a surplus raw materials stock.

When the system calculates the alternative price, all recipes based on the same raw materials are processed, and a number of alternatives are listed with a clear indication of the best possible utilisation.

This allows the best possible decision to be made on the basis of the integrated stock data for raw materials, as regards the disposal of the stock.

### Planning brings operational advantages

The very powerful NAVI Meat planning module for slaughtering allows you to quickly simulate and prepare the best possible production plans on the basis of the data that are already integrated into the system. In addition to this, you can regularly optimise the plans if the data change over time.

Consequently, NAVI Meat can handle both situations dominated by a “push effect” in the form of a commitment to buy raw materials from the producers, and those dominated by a “pull effect” based on a production requirement resulting from customer orders or internal demands for raw materials in the subsequent processes.

The planning module for slaughtering is therefore an ideal tool if you want to be one step ahead in the planning of future productions. It is your guarantee that the company’s capacity is put to the best possible use both with regard to internal production resources and expensive raw materials.

In addition, effective planning ensures that the company’s obligations as a supplier are handled in the best possible way, thereby increasing customer satisfaction and strengthening long-term customer relations.