

How Slaughter Planning of Poultry Works in SAP



Applies to:

This paper vividly explains the business process functionality of the planning of the cutups/ meat portions. The slaughter planning process is the crux of any poultry segment as it ensures the average weight of the flock necessary to meet the demand for the whole chicken as well as for the corresponding chicken parts. It also attends to the custom applications built in SAP to meet the needs of the poultry manufacturers.

For more information, visit the [Business Process Modeling homepage](#).

Summary

The live birds reared from the Broiler farms are sent to the meat processing units or the slaughter houses to obtain either the whole chicken packed in bags and trays or the different chicken parts. The planning of the different SKU's of the whole bird is an intricate process as the weight of each whole bird is different. Usually in an industry typical of this sort the demand and the customer orders are received in the weight of the birds and the chicken parts. For example, we might have a requirement of 10,000 kg/lbs of a breast fillet (one of the SKU after meat portioning of the whole chicken) as a demand or a customer requirement. Now the onus is on the factory planner to accommodate from what varieties of birds (say A or B grade birds) this demand has to be met. The production of one the SKU's results in the production of many other SKU's that constitutes the entire whole chicken. Each whole bird has a certain yield proportion associated with it and this forms an integral part of the planning process. The higher the weight of the bird better is the yield associated with its constituent parts.

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Author Bio

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Introduction to Integrated Poultry Business model

A typical integrated poultry meat production entity includes breeding “Grandparents” of broilers to produce the “parent” breeders growing them and in turn produce the broilers. Breeding Broiler/Layer chicks involves three unique production stages namely, Brooding, Growing and Laying. Each stage is notable specific to time frame say brooding is for 8 weeks, growing is from 9-24th weeks and laying till the life span of the chick. In each of the three stages there is a need to brood chicks, need to raise the pullets to maturity and while fertile harvest their egg production. When hatched these eggs are the next generation of the cross-bed chicks. The final product of this process—is the broilers marketed to the meat industry and the market. During these stages distinguished parameters are maintained to produce real good chicken. An example would be the daily /weekly decision of feed ration for the breeding flock which is dependent on the following inputs- daily mortalities for veterinary surveillance, water/ feed consumption ratio, monitoring daily number of eggs laid and calculating average egg and body weights. The hatch able eggs collected from farm are transferred to hatcheries wherein the eggs are kept in setters for about 18 days, then placed in incubators for 3 days to get the DOC(day-old-chick). This DOC is sent to the contract or broiler farms and grown for about 6-7 weeks, until their processing for meat market. Once the broiler flock is liquidated as per the market demand it is sent to the processing plants (slaughterhouse) where culling takes place. From the processing plants the processed chicken and its essential parts are pushed to the retail market.

Objective

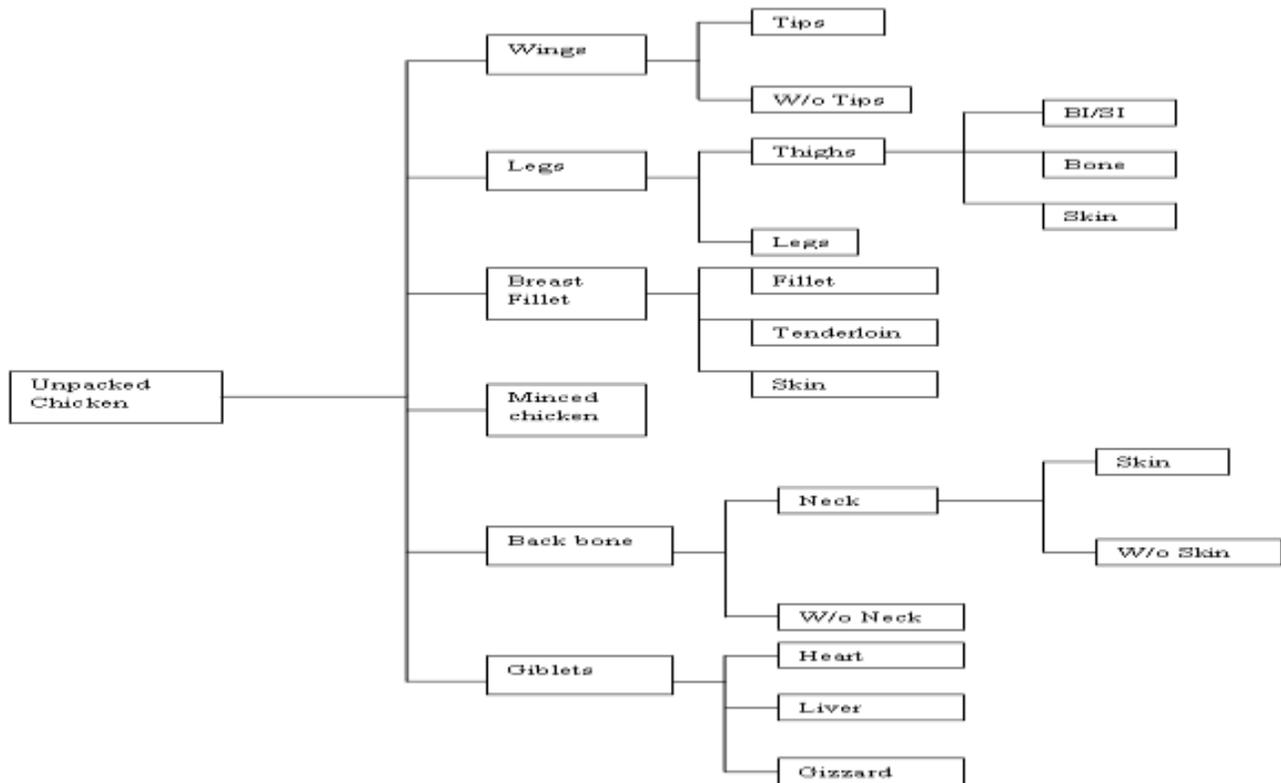
To present a solution that embodies the business planning functionality of slaughter operations that includes the whole meat and the different chicken parts. In SAP the solution is built in two segments- Preplanning overview and the Planning cockpit.

Business Processes

The flock is liquidated from the Broiler farms and sent to the meat processing units. The slaughter operations happen through the MEYN machine (Meat processing unit). Subsequently, the actual weight of the flock is recorded (after killing). The output of the MEYN operation is that we get birds of different weights like 400g, 700g, 1200g and 1300g. Until, this step nobody is sure about the weight as well as the different varieties (700g, ..., 1000g, ..., 1400g) is obtained. However the average weight of the flock is recorded at the Broiler farms on 1st, 3rd and 5th week. The whole chicken that has lower weights (ranging between 450g to 900g) is packed either into trays or bags. Only ‘B’ grades chicken are used for meat portioning along with some other ‘A’ grade birds that range between 950 to 1300g depending upon the market demand. B grades are the ones that might have got bruised during the cut.

On an average 68% of the live birds are used for the cutup or meat portioning. Mean/ Average weight of the bird is taken into consideration. If there are birds of weight 950g and 1050g then the average weight 1000g is noted for the planning of the cutup. There are different SKU’s associated with the whole chicken, that are obtained after the meat porting process. Breast fillet is considered to be the main SKU that has huge market share. Now say if we want to plan for a particular SKU (breast fillet) for 10,000kg, then the planners manually calculate from how many kg of birds this can be achieved. This again depends on the weight of the individual bird that is obtained after MEYN process. For every bird of different weight there is a different matrix associated in terms of yield percentage for different SKU’s like breast fillet, wings, legs etc. More so, there are other SKU’s like giblets (heart, liver and gizzard) and the thighs that have to be listed with respective yield %. For example, if there is a 1400g bird then to achieve the 10,000kg of the wings the planner does this calculation $10,000 / (\text{yield } \%)$ that gives the total weight of the birds required to attain this target.

Listed below is the cutlist for the unpacked chicken which is the outcome of the meat processing operations.



Solution Design

Process Design Methodology

- ✓ Demand driven planning (for the SKU's)
- ✓ Demand table to create demand plans based on historical information and customer insights
- ✓ Planning can be done at different SKU's obtained from the cutup
- ✓ Cutup/ Meat portions planning would consider only the 'B'grades and unpacked chicken of weight greater than 900g in case of 'A' grades (if required)
- ✓ In case of high demand for the SKU (breast fillet) the unpacked chicken of lesser weight is also considered
- ✓ Actual demand based planning on sales orders
- ✓ Forecasted demand consumed by actual demand
- ✓ Preplanning Overview would propose from what varieties of birds say (700g, 800g... 1500g) the actual demand can be met.
- ✓ Planning cockpit does the MRP calculation for the cutups and creates the procurement proposals for the cutup being evaluated. In case of deficit stock of the unpacked chicken procurement proposals would be created on the Live bird in the processing plant

Preplanning Overview

The scenario enables the planner to understand how the demand for a particular SKU could be met. For instance, if a SKU of 10,000kg to be planned the planner has to manually note the availability of the different varieties of the unpacked chicken (say 'B' grade and the 'A' grade of higher weight). 'B' grade is the unpacked chicken with some quality reject. Usually 'A' grade chicken weighing between 500 and 800 is sold as a whole chicken packed either in trays or bags. In order to meet the target quantity of SKU, planner has to manually calculate from what varieties and number of the unpacked chicken which is a cumbersome process

Pre-Planning Overview

Simulate

Demand SKU selection

SKU: 200000302 Breast Fillet Plant: 2204
 Demand Qty: 5,000.000 KG On hand inventory: 1,050.000 KG

Bird Selection

Bird Weight: 1300 ZS_B_Dressed Meat 1300 Gr: Display Cutup
 Birds on hand: 0 EA Req. Dressed Qty: 13,574 EA
 Process qty: 13,574 EA

Process Qty Cut list

Material No#	SKU description	Weight proportion	Weight	UOM
200000300	Neck	0.088	1,194.512	KG
200000301	Skin	0.041	556.534	KG
200000303	Thighs	0.262	3,556.388	KG
200000304	D/Stick	0.178	2,416.172	KG
200000306	Minced Chicken	0.440	5,972.560	KG
200000307	Wings	0.166	2,253.284	KG
200000308	Backbone	0.365	4,954.510	KG

Planning Cockpit

This process is the crux of the slaughter planning for cutups or meat portioning. Based on the actual demand received from the customers for different SKU's, the reverse calculation is done to understand from what weight range of the whole chicken this could be accomplished.

The planner enters the different SKU's that have to be planned in a plant on a daily basis. The list of SKU's can also be saved as a variant.

Planning Cockpit

SKU Selection

SKU: 200000302 Plant: 2204 Planning date: 17.02.2010

Multiple Selection for SKU

Select Single Values (4) Exclude Single Values

Single value
200000302
200000304
200000306
200000301

Once the planning is executed the system lists out the varieties of the dresses meat available in the stock (say 'A' grade and the 'B' grade). It also provides details on the on hand stock of the SKU's along with the demand quantities and finally displays the required quantity that has to be produced.

Planning Cockpit

Plan

Plant: 2204 Planning date: 17.02.2010

Inventory stock details

Material No#	Material description	Inv.Stock	UOM
200000280	ZS_B_Dressed Meat 600 Grams	600.000	EA
200000281	ZS_B_Dressed Meat 700 Grams	700.000	EA
200000282	ZS_B_Dressed Meat 800 Grams	900.000	EA
200000289	ZS_A_Dressed Meat 600 Grams	770.000	EA
200000290	ZS_A_Dressed Meat 700 Grams	600.000	EA

Planning information

Insufficient 'B' Grade stock.
Considering 'A' grade for planning

Continue

Demand Details

SKU No#	SKU description	Plant stock	UOM	Demand Qty	UOM	Required Qty	UOM
200000301	Skin	125.000	KG	75.000	KG	0.000	KG
200000302	Breast Fillet	1,050.000	KG	1,300.000	KG	250.000	KG
200000304	D/Stick	416.000	KG	90.000	KG	0.000	KG
200000306	Minced Chicken	1,526.000	KG	800.000	KG	0.000	KG

Subsequently, the system calculates from what numbers of the dressed meat (unpacked chicken) the deficit quantity of SKU could be met. Only the 'B' grade stock is considered for the meat portioning or the cutups but in case of huge requirement the 'A' grade stock of higher weight is considered. As mentioned in the business processes segment of this article, the 'A' grade bird with weight between 600g and 900g are usually sold as dressed meat packed either in bags or trays.

The stock of the dressed meat (unpacked chicken) is displayed in the Goods Issue details. The other co-products or by-products obtained in the processing are listed in the Goods Receipt item list with proportionate quantities.

Planning Cockpit

Log GR. Item Check & Post Demand Planning

Goods Issue Details

Material No#	Material description	Inv.Stock	UOM	Batch
200000297	ZS_A_Dressed Meat 1300 Grams	120	EA	0000000219
200000297	ZS_A_Dressed Meat 1300 Grams	739	EA	AL-05

Deficit Stock

SKU No#	SKU description	Required Qty	UOM
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Gr. Item list

SKU No#	SKU description	Gr...	Actual Gr...	U...
200000300	Neck	76	76	KG
200000301	Skin	35	35	KG
200000302	Breast Fillet	250	250	KG
200000303	Thighs	225	225	KG
200000304	D/Stick	153	153	KG
200000306	Minced Chicken	378	378	KG
200000307	Wings	143	143	KG
200000308	Backbone	314	314	KG

Back

Finally, the log is generated for all the transactions carried out. The planned order number, the production order number, the material documents for the GI and the GR is also populated as a summary.

Planning Cockpit

Log GR. Item Check & Post Demand Planning

Goods Issue Details

Material No#	Material description	Inv.Stock	UOM	Batch
200000297	ZS_A_Dressed Meat 1300 Grams	120	EA	0000000219
200000297	ZS_A_Dressed Meat 1300 Grams	739	EA	AL-05

Deficit Stock

SKU No#	SKU description	Required Qty	UOM

Summary

Document No#	Message	Material
6240	Planned order created	00000000200000
7700142	Production order created	00000000200000
4900000909	Goods issue created	
5000000446	Goods Receipt created	

Back

In a situation where there's a deficit stock of the dressed meat the system presents the deficit quantity of the SKU stock. The system calculates dressed chicken required to meet the deficit SKU quantity. Ultimately, the system creates a procurement proposal on the deficit stock of the live bird that has to be transferred from the Broiler farms. Once the live bird stock is transferred to the meat processing units, it has to be processed through the MEYN/LINCO processing units to get the unpacked chicken.

Related Content

<http://www.intelligroup.com/sap4poultry.html>

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