**1st Production Planning**

Introduction:

There are two types of Production Planning done on monthly basis:

1. Forward Production Planning.
2. Current Production Planning.

Both above mentioned Production Planning are done for X + 1 month sitting on X month.

Note:

X = Next Month (example May 2020)

X – 1 = Current Month (example April 2020)

X – 2= Previous Month (example March 2020)

X- 12 = Month Last Year (May 2019)

**Computation of “Closing Stock” for X – 1 month:**

**For FG**

Closing stock Depot   
(For X-2 month of Current Year)

Stock in Hand = Bought out Stock + Factory Production Target of (x-1)

Stock in Hand for (x-1) month

Projected Sales for (x-1) month

Opening Stock for (x-1) month = Depot Closing Stock for (x-2) month

𝐶𝑙𝑜𝑠𝑖𝑛𝑔𝑆𝑡𝑜𝑐𝑘 (X – 1 month) = [(𝑂𝑝𝑒𝑛𝑖𝑛𝑔𝑆𝑡𝑜𝑐𝑘 + Stock in Hand) – Projected Sales]

(For X – 1 month)

**Sajal Query :**

* **Depot Closing Stock for (x-2) month**
  + Please Confirm, I need Depot Closing Stock for the month of March 2020 (For Next Month May-2020)?
    - Yes, as we are in April 2020, so that we don’t have closing stock of April 2020. We need to calculate this. This is for Calculation only.
* **Bought out Stock** 
  + For which month (Is it Last Month e.g. April 2020)
    - Yes, from previous plan only
  + From where value will fetch for Bought out Stock.
    - It will be present in your system for 2nd month onwards. For 1st month, you have to upload .xlsx file
* **Factory Production Target of (x-1)**
  + From where will fetch Factory Production Target?
    - Same like Bought out stock
* **Projected Sales for (x-1) month**
  + Is this Previous Month Sales Projection? what happened if April Project Data is not available?
    - Yes, all month data will be present.

**Computation of “Final Forecasted Production Volume” for In-house Products (IP) to produce (in Litre) for X month:**

*Factor = Number of months (For which stock to be hold)*

Normal Factors are being currently used for products as mentioned below:

BOP = 3

IP = 1.5

New launching Products = 1.2

PS = 2

Forecasted Stock = (Factor \* Projected Sales) – (Stock in Transit + Closing Stock)

(X month) (X – 1 month)

**Sajal Understanding:**

* **Factor** 
  + Please confirm, Factor Mapped with Product Master.
    - Sure, within 3pm I will share this with you.
* **Projected Sales**
  + Please confirm, Finial Comparison Forecasting QTY Product wise from Sales Forecasting Module.
    - Yes for April 2020.
* **Stock in Transit**
  + Please Confirm, this is WIP Stock of April 2020?
    - Yes for IP, for BOP it will be planned quantity for buying.

*Assumed Sales (X month)* = *Actual Sales (X month) of Last Year*

Below validation is done to achieve the Final Forecasted Stock to produce:

Forecasted Stock (validated) = IF Forecasted Stock (X month) > Assumed Sales then “Forecasted Stock” otherwise “Assumed Sales”

**Sajal Ok**

Forecasted Quantity (All)

[\*where ‘n’ is the number of Depot(s)]

**Sajal Will discuss on call**

Pack Size = It is a predefined unit of measurement respective to each product

Production Volume (IP) = (Forecasted Quantity (All) \* Pack Size) / 1000

(In Litre)

**Computation of “Final Forecasted Production Volume” for Physician Sample (PS) to produce (in Litre) for X month:**

**Sajal Query**

* **Physician Sample** 
  + Please Confirm, while upload the Physician Sample Plan.xlsx, we will only Consider Summery Sheet’s Product wise TOTAL SAMPLE column value.
    - Both the sheet is required but for this, we required summary column.

For Physician Samples the forecasting is done for upcoming 3 months:

Total Projection Sales (PS) =

Projection for Month 1 + Projection for Month 2 + Projection for Month 3

**Sajal Query**

* **Projection for Month**
  + **Shall we need to upload Next 3 Month PS Projection (e.g. May, June, July 2020)?** 
    - **Min. for 2 months.**

Forecasted Stock (PS) = Total Projection Sales (PS) - Closing Stock (X – 1 month)

(X month)

**Sajal 07-Jun-2020:** Is Closing Stock of PS or Main stock Closing Stock??

Forecasted Quantity (PS)

[\*where ‘n’ is the number of Depot(s)]

**Sajal Will discuss on call**

Pack Size (PS) = Pack Size of respective Physician Sample

Production Volume (PS) = (Forecasted Quantity (PS) \* Pack Size (PS) / 1000

(In Litre)

**Sajal Query**

* **Pack Size**
  + **Product have multiple Pack Size, should we need to upload PS Data including Pack Size, or please defined.**
    - **Yes, pack size is important.**

Calculation for Total Forecasted Volume (In Litre)

Total Production Volume = Production Volume (IP) + Production Volume (PS)

(In Litre)

WIP = Work In Progress (In Litre)

Final Forecasted Production Volume = Total Production Volume – WIP

(In Litre)

**Conversion of Forecasted Production Volume to Final Forecasted Production Quantity:**

Batch Size = Minimum batch size predefined for respective product.

Actual Chargeable Volume = Final Forecasted Production Volume.

Validation to achieve Unit Factor:

IF MOD (Actual Chargeable Volume, Batch Size) = 0

Unit Factor = Forecasted Production Volume / Volume (In Litre)

Product Quantity (IP) = (Actual Chargeable Volume – Production Volume (PS) + WIP) \* Unit Factor

**Sajal Query 2-Jun-2020**

1. Production Planning have two type (Forward Production Planning, Current Production Planning)
   1. Please Confirm the above formulation is for which Production Planning Type?

The full process is for Forward Production Planning

1. Please Confirm is the formulation is Based on Product Basic Like, if Yes

|  |  |  |
| --- | --- | --- |
| Product Code | Name | Pack Size |
| C026 | CARMOZYME | 114 |
| C003 | CARMOZYME | 100 |
| C005 | CARMOZYME | 200 |
| C006 | CARMOZYME | 450 |

* 1. For WIP Stock which Stock Item Need to be Consider as there are No Product Code and Pack Size in the Excel. Also, Name does not match (CARMOZYME SYRUP)

Fow WIP you have to calculate after volume consideration, where all SKUs of single product will take into consideration as a whole.

* 1. In Physician Sample Plan there is No Pack size. So will not able to calculate *Production Volume (PS) = (Forecasted Quantity (PS) \* Pack Size (PS) / 1000*

*(In Litre)*. Please Suggest.

I have already communicated that in PS, you have to taken care of 2nd sheet.

1. In Formula *Unit Factor = Forecasted Production Volume / Volume (In Litre*). What about Volume (In Litre) the value will come.

Formula is given: Qty \* 1000/ Pack Size

**2nd Purchase Planning**

**Opening Stock Computation for Raw Materials (RM) and Packaging Materials (PM) for X month:**

Opening Stock RM (X – 1 month) = Closing Stock RM (X – 2 month)

Stock Purchased RM (X – 1 month) = Stock in RM (X – 1 month)

Projected RM Stock = RM Stock to be used during (X – 1 month)

𝐶𝑙𝑜𝑠𝑖𝑛𝑔 𝑆𝑡𝑜𝑐𝑘 RM (X – 1 month) = [(𝑂𝑝𝑒𝑛𝑖𝑛𝑔 𝑆𝑡𝑜𝑐𝑘 RM + Stock in RM) – Projected RM Stock]

(For X – 1 month)

Opening Stock PM (X – 1 month) = Closing Stock PM (X – 2 month)

Stock Purchased PM (X – 1 month) = Stock in PM (X – 1 month)

Projected PM Stock = PM Stock to be used during (X – 1 month)

𝐶𝑙𝑜𝑠𝑖𝑛𝑔 𝑆𝑡𝑜𝑐𝑘 PM (X – 1 month) = [(𝑂𝑝𝑒𝑛𝑖𝑛𝑔 𝑆𝑡𝑜𝑐𝑘 PM + Stock in PM) – Projected RM Stock]

(For X – 1 month)

Opening Stock of RM for the X month:

Opening Stock RM (X month) = Closing Stock RM (X- 1 month)

Opening Stock of PM for the X month:

Opening Stock PM (X month) = Closing Stock PM (X- 1 month)

RM Quantity computation:

Select Specific FG

Forecasted Production Volume from Production Plan

BOM for selected FG

Raw Material Quantity required to produce selected FG

RM Quantity (All FG)

[\*where ‘n’ is the number of Finished Goods having common Raw Materials]

PM Quantity computation:

Select Specific FG

Forecasted Production Volume from Production Plan

BOM for selected FG

Packaging Material Quantity required to produce selected FG

PM Quantity (All FG)

[\*where ‘n’ is the number of Finished Goods having common Packaging Materials]

Validations with Re-order Stock Level (RM):

IF RM Quantity (All FG) > Opening Stock RM (X Month)

RM (To be Purchased) = Opening Stock RM (X month) – RM Quantity (All FG)

IF Opening Stock RM (X month) < Re-Order Stock Level (RM)

RM (To be Purchased) = Re-Order Stock Level (RM) - Opening Stock RM (X month)

Validations with Re-order Stock Level (PM):

IF PM Quantity (All FG) > Opening Stock PM (X Month)

PM (To be Purchased) = Opening Stock PM (X month) – PM Quantity (All FG)

IF Opening Stock PM (X month) < Re-Order Stock Level (PM)

PM (To be Purchased) = Re-Order Stock Level (PM) - Opening Stock PM (X month)

**3rd Procurement Planning**

* As per the current practice, Raw Materials or Packing Materials are to be procured from Multiple Vendors.
* The total quantity of Raw material / Packing material has to be brought from Purchase Plan.
* Raw material / Packing material vendor list are being maintained along with the minimum order size and minimum pack size for the respective vendors.
* For each Raw material / Packing material maximum three vendors can be selected.
* The quantity of the Raw material / Packing material which have to be procured, must be entered per vendor wise such that the sum of the procured quantity equals the purchased quantity which was entered manually.
* The quantity of the Raw material / Packing material which have to be procured vendor wise must fulfil the minimum pack size and minimum order size.
* The landing cost per unit for the Raw material / Packing material is being manually entered.
* In Party master the number of credit days party-wise will be defined based on which the final landing cost is calculated which is as follows:

**Final Landing cost = Landing cost per unit – (Landing cost per unit \* (14.5% \* (Credit days/365)))**

* Total amount is calculated product wise along-with Final Landing Cost with ordered quantity for that product.

Validations used in Procurement Planning:

K = Number of Vendors (Minimum Value = 1; Maximum Value = 3)

(RM Vendor Qty.)K = Raw Material Quantity to be Purchased from Vendor K.

RM (Planned) = RM Quantity from Purchase Plan (X month).

IF “RM Qty. to be procured” > Minimum Order for (RM Vendor Qty.) K

Total RM Quantity = K

IF “Total RM Quantity” > RM (Planned)

The purchase order is raised.

Note: Same Validation is being used for Packaging Materials also.

**Requirements:**

1. Month wise Production Forward Plan
2. Month wise Production Deviation Plan
3. Month wise Purchase Plan
4. Month wise Purchase Deviation Plan (if any)
5. Month wise Procurement Plan
6. Month wise Procurement Deviation Plan (if any)
7. Dashboard includes:
   1. Month wise Product wise Manufacture/ Purchase Quantity Trend
   2. Month wise Product wise Manufacture/ Purchase Deviation Quantity Trend
   3. Month wise Raw Material/ Packing Material Requirement Trend
   4. Month wise Raw Material/ Packing Material Purchase Trend
   5. Month wise Raw Material/ Packing Material Deviation Trend
   6. Month wise Vendor wise Product wise Purchase Trend