

# MRP

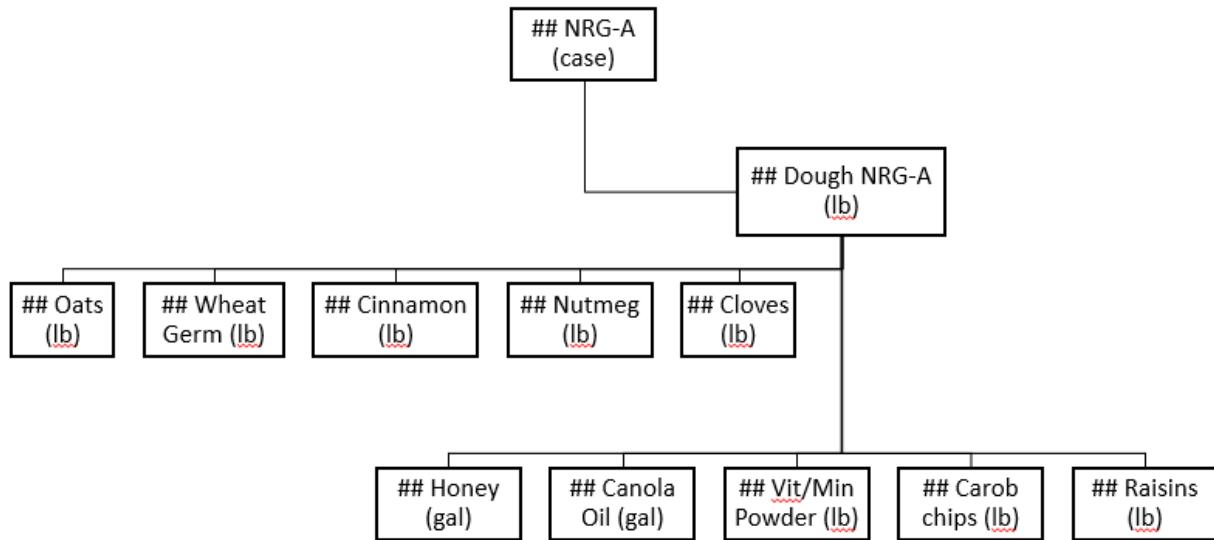
## Exercise Introduction

Material resource planning is intended for 3 objectives:

- Ensure materials are available for production and products are available for delivery to customers.
- Maintain the lowest possible material and product levels in store to achieve LEAN processes.
- Plan manufacturing activities, delivery schedules and purchasing activities.

## Bill of Material (BOM)

A critical input to the MRP process is the bill of material (BOM), which shows how components and semi-finished products are combined to produce the final product. A graphical representation of the BOM for the NRG-A bar is shown below:

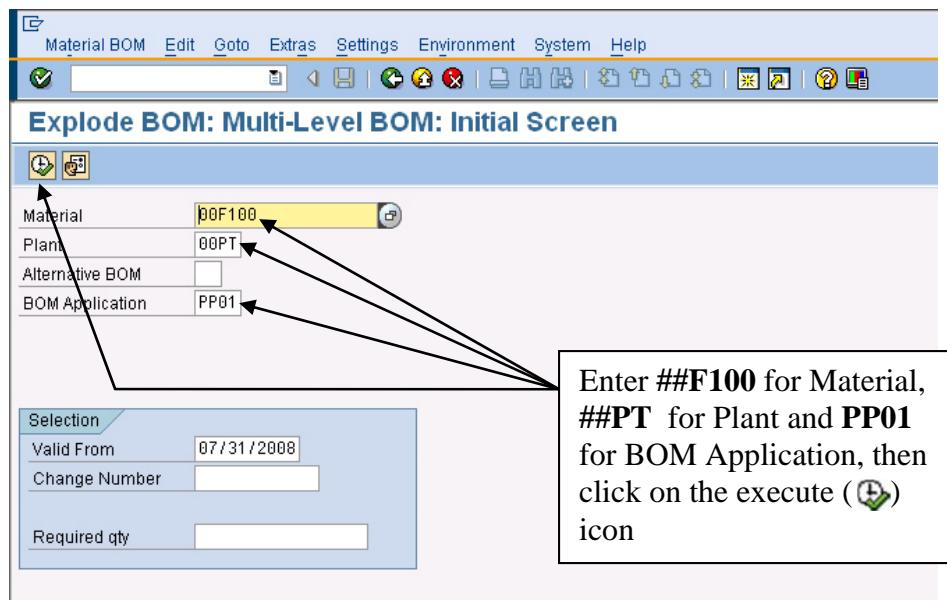


The raw materials (Oats, Wheat Germ, etc.) are combined in a mixer to produce a 500 lb. batch of dough. The dough is then transferred to the baking line, where it is formed into bars, baked and packaged. For simplicity, we have ignored the wrappers, boxes and cases that are needed to produce a complete case of Fitter Snacker bars.

To view the BOMs for Fitter Snacker, follow the menu path:

**Logistics ▷ Production ▷ Master Data ▷ Bills of Material ▷ Reporting ▷ BOM  
Explosion ▷ Material BOM ▷ Multilevel BOM**

# MRP

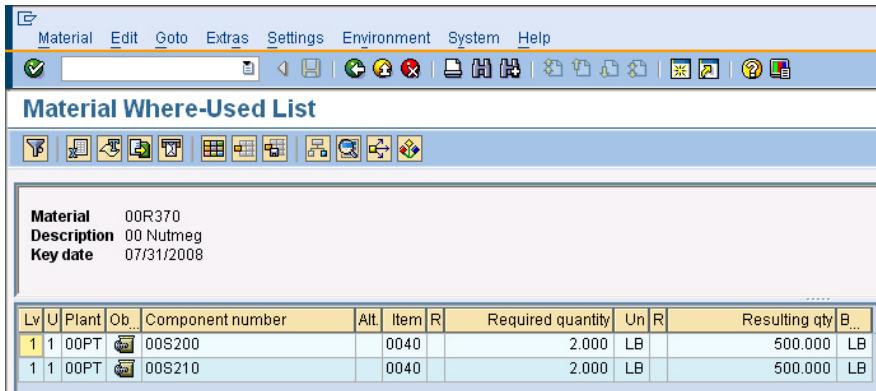


| Display Multilevel BOM  |      |        |                  |  |    |       |
|---|------|--------|------------------|--|----|-------|
| <b>Material</b> 00F100<br><b>Plant/Usage/Alt.</b> 00PT/1/01<br><b>Description</b> 00 NRG-A<br><b>Base Qty (CS)</b> 7.000<br><b>Reqd Qty (CS)</b> 7                    |      |        |                  |  |    |       |
| This screen shows 7 cases of snack bars requires 500 lbs. of dough, and that to produce 500 lbs. of dough, 300 lbs. of Oats, 50 lbs. of Wheat Germ, etc. are required |      |        |                  |  |    |       |
| Level no.   | Item | Obj.   | Component        |  |    |       |
| .1  | 0010 | 00S200 |                  |  |    |       |
| ..2   | 0010 | 00R380 |                  |  |    |       |
| ..2   | 0020 | 00R420 | 00 Wheat Germ    |  | 50 | LB L  |
| ..2   | 0030 | 00R320 | 00 Cinnamon      |  | 5  | LB L  |
| ..2   | 0040 | 00R370 | 00 Nutmeg        |  | 2  | LB L  |
| ..2   | 0050 | 00R330 | 00 Cloves        |  | 1  | LB L  |
| ..2   | 0060 | 00R360 | 00 Honey         |  | 10 | GAL L |
| ..2   | 0070 | 00R300 | 00 Canola        |  | 7  | GAL L |
| ..2   | 0080 | 00R410 | 00 VitMin Powder |  | 5  | LB L  |
| ..2   | 0090 | 00R310 | 00 Carob Chips   |  | 50 | LB L  |
| ..2   | 0100 | 00R400 | 00 Raisins       |  | 50 | LB L  |

This screen shows the recipe required for seven cases of dough. To learn more about any of the materials required to make an NRG-A bar, select the item and click on the detail icon.

With the nutmeg selected, click on the where-used icon (Where-Used icon), which will call up the following screen:

# MRP



This screen shows that Nutmeg is used in two products—the dough for NRG-A and NRG-B bars. (You can double click on each line to view the products.) According to help.sap.com, the where-used list can be used to:

- Determine requirements for a specific material
- Select products that are affected by a change to an individual part
- Find assemblies that will be delayed if, for example, there is a delay in the delivery of a raw material
- Calculate the effect on the cost of a product if the price of a raw material rises

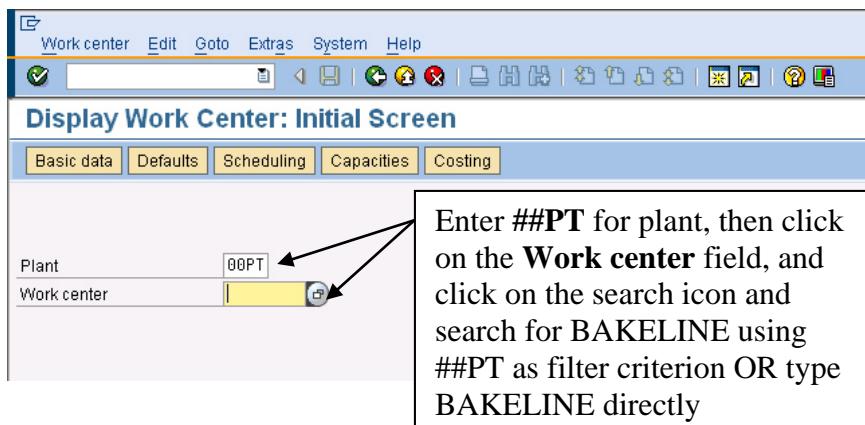
Click on the exit icon (🏠) until you return to the SAP Easy Access screen.

## Display Workcenters

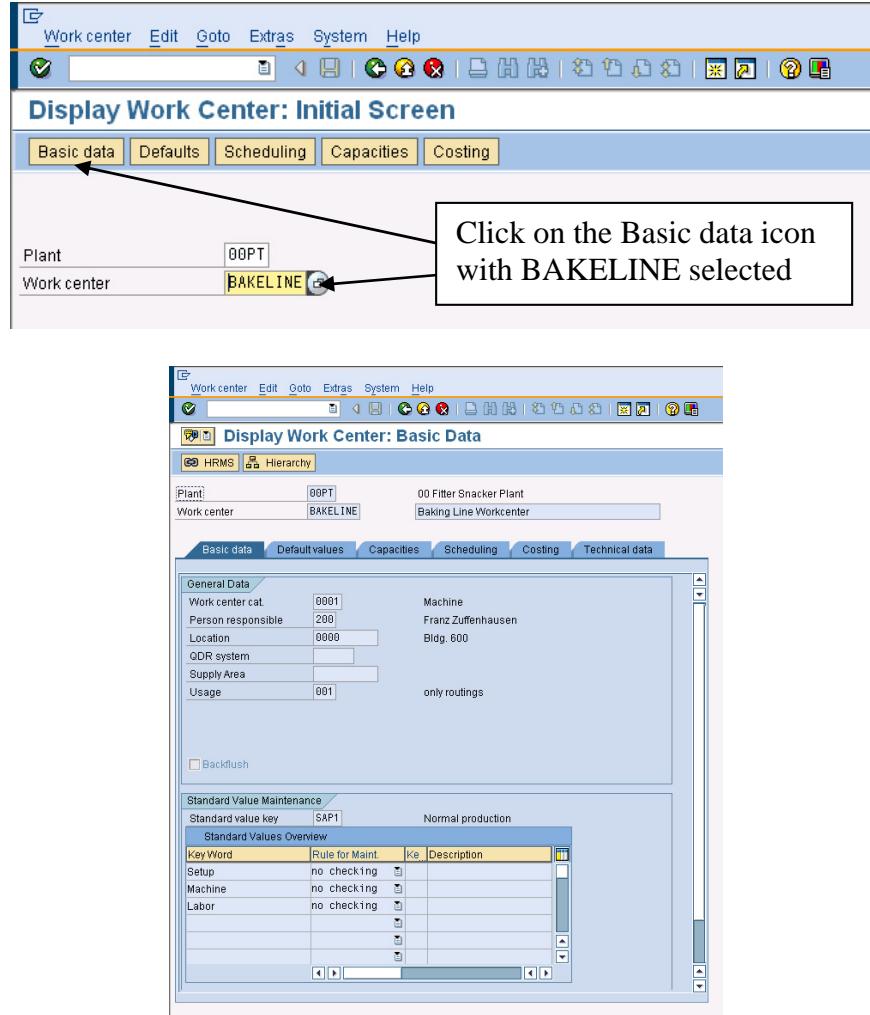
Production is carried out at workcenters. In the SAP ERP system, workcenters can represent machines or groups of machines, production lines, assembly lines, employees or groups of employees.

To display the workcenters used for Fitter Snacker's snack bar production, follow the menu path:

Logistics > Production > Master Data > Work Centers > Work Center > Display



# MRP



This multi-tabbed screen contains all relevant data for the workcenter.  
Click on the exit icon ( ) until you return to the SAP Easy Access screen.

## Routings

Routings define the work centers that a product must visit in the production process. Routings also define the operations that must be performed at each workcenter and the components that are needed for each operation.

### 1. Create ##F100 (NRG-A bar) and ##F110 (NRG-B bar) Routings

To create a routing for the NRG-A bars, follow the menu path:

# MRP

Logistics > Production > Master Data > Routings > Routings > Standard Routings  
 > Create

Routing Edit Goto Details Extras Environment System Help

Create Routing: Initial Screen

Material 00F100

Plant 00PT

Sales Document Sales Document Item

WBS Element

Group 00GROUP

Validity

Change Number

Key date 08/01/2008

Revision Level

Additional data Profile

Enter ##F100 for material, ##PT for plant and ##Group for Group, then click on the enter icon

Routing Edit Goto Details Extras Environment System Help

Create Routing: Header Details

Material 00F100 00 NRG-A

Task list

Group 00GROUP

Group Counter 1 00 NRG-A

Plant 00PT

Production line Line hierarchy

General data

□ Deletion flag

Usage 1

Status 4

Planner group

Planning work center

CAPP order

From Lot Size

Old task list no.

Enter 1 for Usage and 4 for Status, then click on the Operations icon

Routing Edit Goto Details Extras Environment System Help

Create Routing: Operation Overview

Material 00F100 00 NRG-A

Sequence 0

Work center BAKELINE

| Op.  | SOp | Work ce  | Plnt | Co.  | Standard | Description | Lo... | P... | Cl... | O... | Pe... | C... | Su... | Base Quant... | U... | StdValueTxt1 | UnitActivity | UnitActivity |
|------|-----|----------|------|------|----------|-------------|-------|------|-------|------|-------|------|-------|---------------|------|--------------|--------------|--------------|
| 0010 |     | BAKELINE | 00PT | BAKE |          | Bake Dough  |       |      |       |      |       |      |       | 7             | CS   |              |              |              |
| 0020 |     |          | 00PT |      |          |             |       |      |       |      |       |      |       | 1             | CS   |              |              |              |
| 0030 |     |          | 00PT |      |          |             |       |      |       |      |       |      |       | 1             | CS   |              |              |              |

Enter BAKELINE for Work center  
 Enter BAKE for Control key  
 Enter Bake Dough for Description  
 Enter 7 for Base Quantity  
 Then click on the enter icon

# MRP

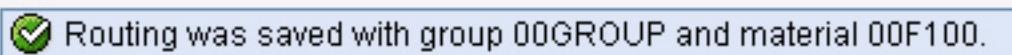
Scroll over to extreme right and enter **30** for Setup and **30** for Machine, then click on the CompAlloc (component allocation) icon

Select the only component listed and then click on the New assignment icon

Click on Oper./Act. (operation/activity) list

Click on the enter icon

Click on the save icon (💾) to save the routing. You will get a message like the following:



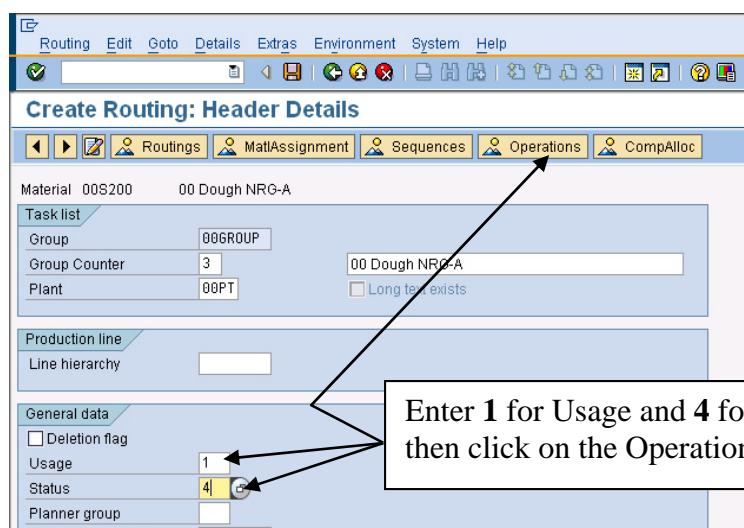
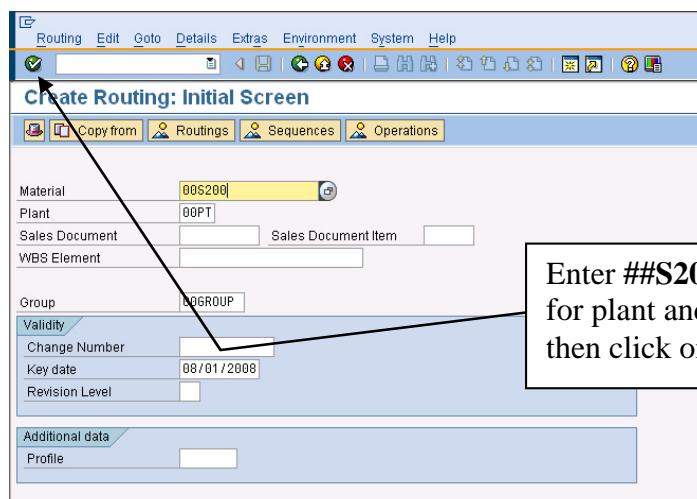
# MRP

Return to the beginning of section 1 and repeat the process to create a routing for material **##F110** (NRG-B bars). All entries are the same as for the **##F100** (NRG-A bars).

## 2. Create Routings for material **##S200** (dough for NRG-A bars) and **##S210** (dough for NRG-B bars)

To create a routing for **##S200** (dough for NRG-A bars), again follow the menu path:

Logistics > Production > Master Data > Routings > Routings > Standard Routings > Create



# MRP

**Create Routing: Operation Overview**

Material 00S2 Sequence 0

Enter the information shown, then click on the enter icon (✓)

| Op   | SOp | Workcenter | Plnt | Do  | Standard | Description | Lo | P | Cl | O | Pe | C | Su | Base Quantity | U  | StdVa |
|------|-----|------------|------|-----|----------|-------------|----|---|----|---|----|---|----|---------------|----|-------|
| 0010 |     | MIXERS     | 0OPT | MIX |          | Mix Dough   |    |   |    |   |    |   |    | 500           | LB |       |
| 0020 |     |            | 0OPT |     |          |             |    |   |    |   |    |   |    | 1             | LB |       |
| 0030 |     |            | 0APT |     |          |             |    |   |    |   |    |   |    | 1             | IR |       |

**Create Routing: Operation Overview**

Material 00S200 Sequence 0

00 Dough NRG-A Grp.Count3

Scroll over to the right and enter 30 for Setup and 30 for Machine, then click on CompAlloc

| Op   | SOp | Lo | P | Cl | O | Pe | C | Su | Base Quantity | Setup | Unit | Activity | Machine | Unit | Activity | Labor | Unit | Activity |
|------|-----|----|---|----|---|----|---|----|---------------|-------|------|----------|---------|------|----------|-------|------|----------|
| 0010 |     |    |   |    |   |    |   |    | 500           | LB    | 30   | MIN      | 30      | MIN  |          |       |      |          |
| 0020 |     |    |   |    |   |    |   |    | 1             | LB    |      |          |         |      |          |       |      |          |
| 0030 |     |    |   |    |   |    |   |    | 1             | LB    |      |          |         |      |          |       |      |          |

**Material Component Overview**

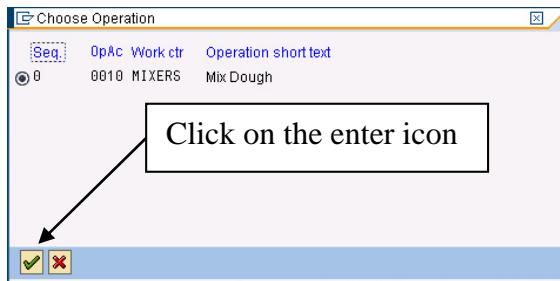
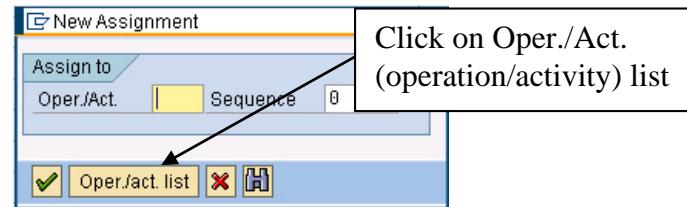
Material 00S200 Group 00GROUP Sequence 0 BOM 00000001 Alt.BOM 1

00 Dough NRG-A  
00 Dough NRG-A

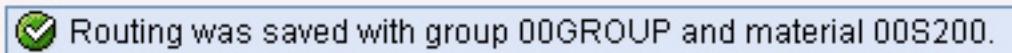
Select all components, then click on the New assignment icon

| P | Le | Path | Itc    | Component | QTY | Unit | Activity | Machine | Unit | Activity | Unit | Activity |
|---|----|------|--------|-----------|-----|------|----------|---------|------|----------|------|----------|
| 0 | 0  | 0010 | 00R380 |           | 1   | LB   | L        |         | 00   |          | 00   |          |
| 0 | 0  | 0020 | 00R420 |           | 10  | GALL |          |         | 00   |          | 00   |          |
| 0 | 0  | 0030 | 00R320 |           | 7   | GALL |          |         | 00   |          | 00   |          |
| 0 | 0  | 0040 | 00R370 |           | 5   | LB   | L        |         | 00   |          | 00   |          |
| 0 | 0  | 0050 | 00R330 |           | 50  | LB   | L        |         | 00   |          | 00   |          |
| 0 | 0  | 0060 | 00R360 |           | 50  | LB   | L        |         | 00   |          | 00   |          |
| 0 | 0  | 0070 | 00R300 |           | 50  | LB   | L        |         | 00   |          | 00   |          |
| 0 | 0  | 0080 | 00R410 |           | 50  | LB   | L        |         | 00   |          | 00   |          |
| 0 | 0  | 0090 | 00R310 |           | 50  | LB   | L        |         | 00   |          | 00   |          |
| 0 | 0  | 0100 | 00R400 |           | 50  | LB   | L        |         | 00   |          | 00   |          |

# MRP



Click on the save icon ( ) to save the routing. You will get a message like the following:



Return to the beginning of section 2 and repeat the process to create a routing for **##S210** (dough for NRG-B bars).  
All entries are the same as for **##S200** (dough for NRG-A bars).

## 3. Create Product Group

Many firms produce hundreds of products, and planning for each product individually is not feasible or desirable. What these firms do is create product groups, and then plan production for a small number of product groups and then transfer these plans to individual products based on historic percentages. While Fitter Snacker does not have a large of number products, we will use the product group process anyway.

To create a product group for Fitter Snacker, follow the menu path:

**Logistics ▷ Production ▷ SOP ▷ Product Group ▷ Create**

which will produce the following screen:

# MRP

**Create Product Group: Initial Screen**

|               |              |                        |
|---------------|--------------|------------------------|
| Product group | 00 NRG Group | 00 NRG-Aand NRG-B Bars |
| Plant         | 00PT         |                        |
| Base Unit     | CS           |                        |

**Members**

Materials  
 Product groups

Enter ## NRG Group and ## NRG-A and NRG-B Bars  
 Enter ##PT for Plant  
 Enter CS for Base unit  
 Then click on the enter icon

**Create Product Group: Maintain Members (Materials)**

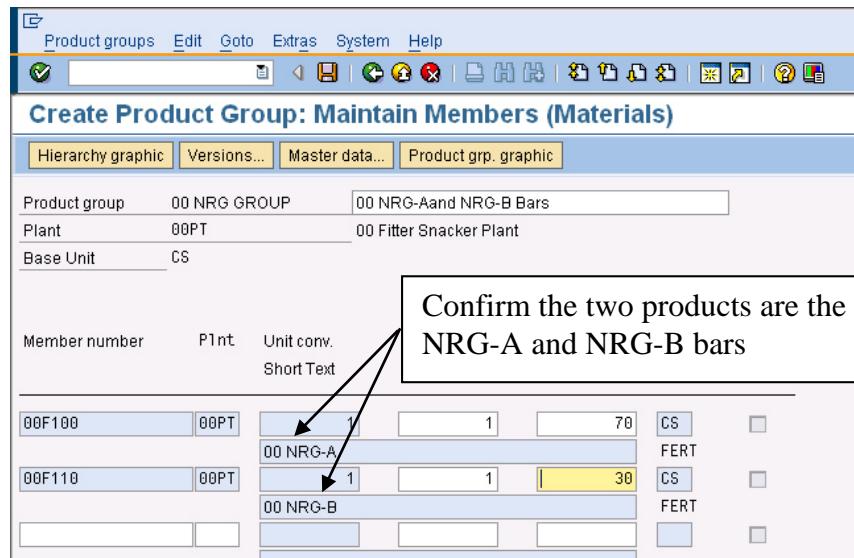
|               |              |                         |
|---------------|--------------|-------------------------|
| Product group | 00 NRG GROUP | 00 NRG-Aand NRG-B Bars  |
| Plant         | 00PT         | 00 Fitter Snacker Plant |
| Base Unit     | CS           |                         |

| Member number | Plnt | Unit conv.<br>Short Text | Aggr.fact. | Proportion | UoM | V M Fx | MTyp |
|---------------|------|--------------------------|------------|------------|-----|--------|------|
| 00F100        | 00PT |                          | 1          | 70         |     |        |      |
| 00F110        | 00PT |                          | 1          | 30         |     |        |      |

Enter ##F100 and ##F110 for member numbers  
 Enter ##PT for Plnt, 1 for Aggr. fact. for both bars  
 Enter 70 for the Proportion for NRG-A and 30 for the proportion for NRG-B bars

These proportions mean that whatever production is planned for the NRG group, it will be assumed that 70% of the production should be NRG-A bars and 30% should be NRG-B bars. Click on the enter icon (

# MRP

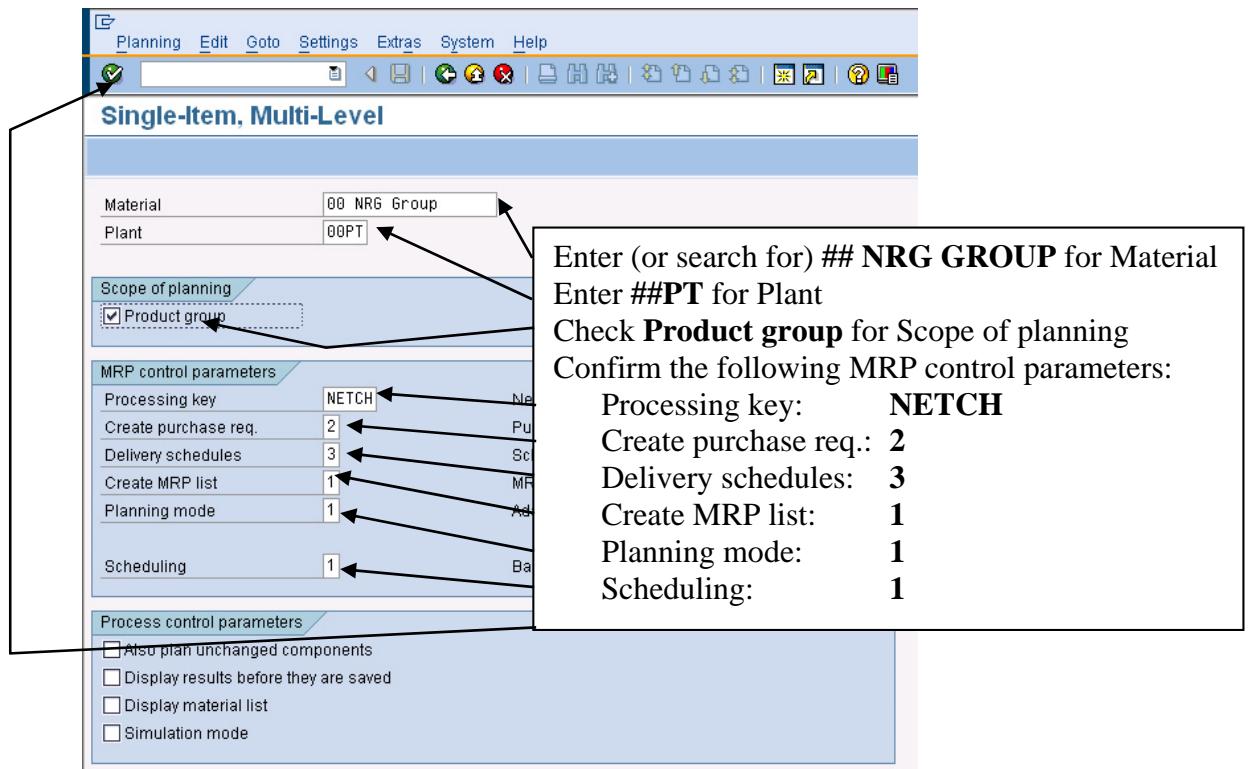


Click on the save icon ( H) to save the product group.

## 4. Run MRP

We can run the MRP process on our new product group. To do this, follow the menu path:

**Logistics ▷ Production ▷ MRP ▷ Planning ▷ Multilevel Single-Item Planning (MD02)**



# MRP

Enter the information shown above, then click on the enter icon (✓). This will produce the following message:



Click on the enter icon (✓) again and you should get a report like the following:

| Single-Item, Multi-Level   |      |            |      |            |      |             |        |             |        |        |      |       |     |    |   |   |     |        |      |    |    |   |   |   |    |
|--|------|------------|------|------------|------|-------------|--------|-------------|--------|--------|------|-------|-----|----|---|---|-----|--------|------|----|----|---|---|---|----|
| <b>Statistics</b><br>Materials planned 2<br>Materials with new exceptions<br>Materials with terminated MRP list  |      |            |      |            |      |             |        |             |        |        |      |       |     |    |   |   |     |        |      |    |    |   |   |   |    |
| <b>Parameters</b><br>Plnt 00PT<br>Processing Key NETCH<br>Create Purchase Requisition 2<br>Sched. Agreement Schedule Line 3<br>Create MRP List 1<br>Planning Mode 1<br>Scheduling 1  |      |            |      |            |      |             |        |             |        |        |      |       |     |    |   |   |     |        |      |    |    |   |   |   |    |
| <b>Database statistics</b><br>No Procurement Proposals Changed   |      |            |      |            |      |             |        |             |        |        |      |       |     |    |   |   |     |        |      |    |    |   |   |   |    |
| <b>Run-time statistics</b><br>Start of planning run 10:59:23<br>End of planning run 10:59:24<br>Planning run time 00:00:01<br>CPU time : Import 00:00:01   |      |            |      |            |      |             |        |             |        |        |      |       |     |    |   |   |     |        |      |    |    |   |   |   |    |
| <b>Ranking list for materials with highest CPU times (in ms)</b>   |      |            |      |            |      |             |        |             |        |        |      |       |     |    |   |   |     |        |      |    |    |   |   |   |    |
| <table border="1"><thead><tr><th>Material</th><th>Plnt</th><th>PlgRuntime</th><th>Read</th><th>Net calc.</th><th>BOM</th><th>LdTimeSched</th><th>Update</th></tr></thead><tbody><tr><td>00F100</td><td>00PT</td><td>1,206</td><td>783</td><td>31</td><td>0</td><td>0</td><td>328</td></tr><tr><td>00F110</td><td>00PT</td><td>28</td><td>16</td><td>0</td><td>0</td><td>0</td><td>11</td></tr></tbody></table> |      | Material   | Plnt | PlgRuntime | Read | Net calc.   | BOM    | LdTimeSched | Update | 00F100 | 00PT | 1,206 | 783 | 31 | 0 | 0 | 328 | 00F110 | 00PT | 28 | 16 | 0 | 0 | 0 | 11 |
| Material   | Plnt | PlgRuntime | Read | Net calc.  | BOM  | LdTimeSched | Update |             |        |        |      |       |     |    |   |   |     |        |      |    |    |   |   |   |    |
| 00F100   | 00PT | 1,206      | 783  | 31         | 0    | 0           | 328    |             |        |        |      |       |     |    |   |   |     |        |      |    |    |   |   |   |    |
| 00F110   | 00PT | 28         | 16   | 0          | 0    | 0           | 11     |             |        |        |      |       |     |    |   |   |     |        |      |    |    |   |   |   |    |

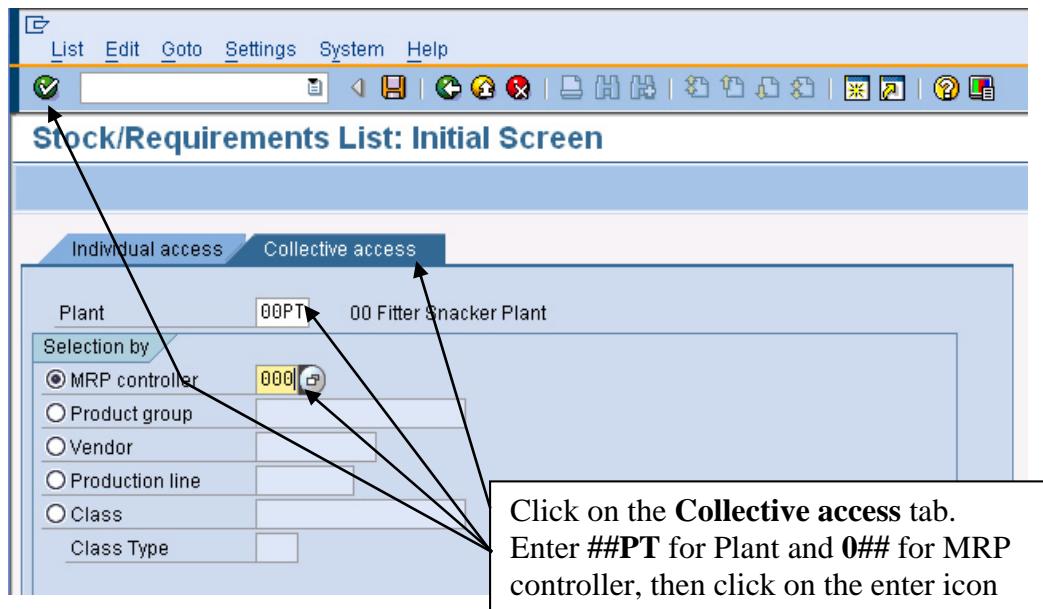
The details of your report may be different, but that is not a problem. As long as you don't have an error messages, things should be okay. To confirm that they are, we can check the status of key materials.

To view the status of a material, we can use the Stock/Requirements list. Like many transactions in the SAP system, there are a number of menu paths that can take you to the Stock/Requirements list. One of these is:

**Logistics ▷ Production ▷ MRP ▷ Evaluations ▷ Stock/Requirements List (MD04)**

which will produce the following screen:

# MRP



Stock/Requirements List: Material List

Selected stock/requirements lists   Define traffic light   Exception groups

Plant: 00PT   00 Fitter Snacker Plant  
MRP Controller: 000   FS Controller

| Light | Material | Material Description | A. | Supply | 1stRDS | 2nd   | 1 | 2 | 3 | 4 | 5 | 6 | 7 | 8 | Plant sto... | B.     | MTyp | PT  | S... | A. | MT  | Cde                                 | C                                   |
|-------|----------|----------------------|----|--------|--------|-------|---|---|---|---|---|---|---|---|--------------|--------|------|-----|------|----|-----|-------------------------------------|-------------------------------------|
| CO0   | 00F100   | 00 NRG-A             |    | 999.9  | 999.9  | 999.9 |   |   |   |   |   |   |   |   | 0            | CS     | FERT | E   |      | PD | 000 | <input checked="" type="checkbox"/> |                                     |
| CO0   | 00F110   | 00 NRG-B             |    | 999.9  | 999.9  | 999.9 |   |   |   |   |   |   |   |   | 1,000        | CS     | FERT | E   |      | PD | 000 | <input checked="" type="checkbox"/> |                                     |
| CO0   | 00R300   | 00 Canola            |    | 999.9  | 999.9  | 999.9 |   |   |   |   |   |   |   |   | 0            | GAL    | ROH  | F   |      | PD | 002 | <input checked="" type="checkbox"/> |                                     |
| CO0   | 00R310   | 00 Carob Chips       |    | 999.9  | 999.9  | 999.9 |   |   |   |   |   |   |   |   | 0            | LB     | ROH  | F   |      | PD | 002 | <input checked="" type="checkbox"/> |                                     |
| CO0   | 00R320   | 00 Cinnamon          |    |        |        |       |   |   |   |   |   |   |   |   |              |        |      |     |      |    |     |                                     |                                     |
| CO0   | 00R330   | 00 Cloves            |    |        |        |       |   |   |   |   |   |   |   |   |              |        |      |     |      |    |     |                                     |                                     |
| CO0   | 00R340   | 00 Dates             |    |        |        |       |   |   |   |   |   |   |   |   |              |        |      |     |      |    |     |                                     |                                     |
| CO0   | 00R350   | 00 Hazelnuts         |    |        |        |       |   |   |   |   |   |   |   |   |              |        |      |     |      |    |     |                                     |                                     |
| CO0   | 00R360   | 00 Honey             |    | 999.9  | 999.9  | 999.9 |   |   |   |   |   |   |   |   | 0            | GAL    | ROH  | F   |      | PD | 002 | <input checked="" type="checkbox"/> |                                     |
| CO0   | 00R370   | 00 Nutmeg            |    | 999.9  | 999.9  | 999.9 |   |   |   |   |   |   |   |   | 0            | LB     | ROH  | F   |      | PD | 002 | <input checked="" type="checkbox"/> |                                     |
| CO0   | 00R380   | 00 Oats              |    | 999.9  | 999.9  | 999.9 |   |   |   |   |   |   |   |   | 3            | 44,000 | LB   | ROH | F    |    | PD  | 002                                 | <input checked="" type="checkbox"/> |
| CO0   | 00R390   | 00 Protein Powder    |    | 999.9  | 999.9  | 999.9 |   |   |   |   |   |   |   |   | 0            | LB     | ROH  | F   |      | PD | 002 | <input checked="" type="checkbox"/> |                                     |
| CO0   | 00R400   | 00 Raisins           |    | 999.9  | 999.9  | 999.9 |   |   |   |   |   |   |   |   | 0            | LB     | ROH  | F   |      | PD | 002 | <input checked="" type="checkbox"/> |                                     |
| CO0   | 00R410   | 00 VitMin Powder     |    | 999.9  | 999.9  | 999.9 |   |   |   |   |   |   |   |   | 0            | LB     | ROH  | F   |      | PD | 002 | <input checked="" type="checkbox"/> |                                     |
| CO0   | 00R420   | 00 Wheat Germ        |    | 999.9  | 999.9  | 999.9 |   |   |   |   |   |   |   |   | 3            | 2,000  | LB   | ROH | F    |    | PD  | 002                                 | <input checked="" type="checkbox"/> |
| CO0   | 00S200   | 00 Dough NRG-A       |    | 999.9  | 999.9  | 999.9 |   |   |   |   |   |   |   |   | 0            | LB     | HALB | E   |      | PD | 001 | <input checked="" type="checkbox"/> |                                     |
| CO0   | 00S210   | 00 Dough NRG-B       |    | 999.9  | 999.9  | 999.9 |   |   |   |   |   |   |   |   | 0            | LB     | HALB | E   |      | PD | 001 | <input checked="" type="checkbox"/> |                                     |

# MRP

The screenshot shows the SAP MRP Stock/Requirements List interface. At the top, there is a menu bar with options like List, Edit, Goto, Settings, Environment, System, and Help. Below the menu is a toolbar with various icons. The main title is "Stock/Requirements List as of 14:09 Hrs". A sub-header indicates the material is 00R300, 00 Canola, and the plant is 00PT. The MRP type is PD, and the material type is GAL. There are buttons for Show Overview Tree, Print, and other functions. The table below has columns: A, Date, MRP e, MRP element data, Reschedule, E, Rec./reqd.qty, and Available qty. One row is selected for material 00R300, 00 Canola, with the date 08/01/2008 and stock level 0.

| A                                   | Date       | MRP e | MRP element data | Reschedule | E | Rec./reqd.qty | Available qty |
|-------------------------------------|------------|-------|------------------|------------|---|---------------|---------------|
| <input checked="" type="checkbox"/> | 08/01/2008 | Stock |                  |            |   |               | 0             |

Click on the back icon, which will bring you back to the list of your materials. Note that there is now a check mark next to **## Canola** in the column **Already accessed**:

This screenshot shows the same SAP MRP Stock/Requirements List interface. A callout box labeled "Already accessed" points to the checkbox in the "Accessed" column for the row where the material is 00R300, 00 Canola. The "Accessed" column header is "A, Supr". The table includes columns for Light, Material, Material Description, and Safety Stock levels (999.9). The row for 00R300 is highlighted with a yellow background.

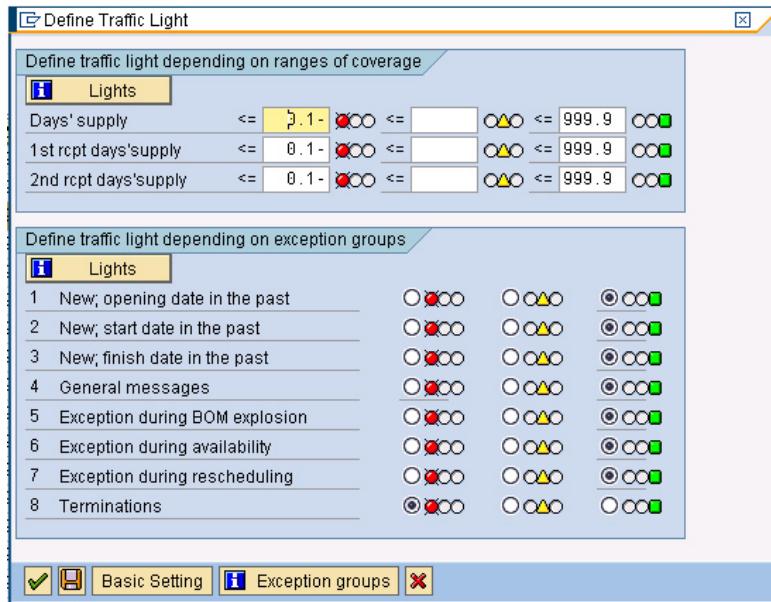
| Light  | Material       | Material Description | A, Supr                             | 999.9 | 999.9 | 999.9 |
|--------|----------------|----------------------|-------------------------------------|-------|-------|-------|
| 00F100 | 00 NRG-A       |                      | <input type="checkbox"/>            | 999.9 | 999.9 | 999.9 |
| 00F110 | 00 NRG-B       |                      | <input type="checkbox"/>            | 999.9 | 999.9 | 999.9 |
| 00R300 | 00 Canola      |                      | <input checked="" type="checkbox"/> | 999.9 | 999.9 | 999.9 |
| 00R310 | 00 Carob Chips |                      | <input type="checkbox"/>            | 999.9 | 999.9 | 999.9 |
| 00R320 | 00 Cinnamon    |                      | <input type="checkbox"/>            | 999.9 | 999.9 | 999.9 |
| 00R330 | 00 Clives      |                      | <input type="checkbox"/>            | 999.9 | 999.9 | 999.9 |

This feature helps the MRP controller keep track of which materials they have already reviewed. The traffic lights also help the MRP controller focus on critical materials. The traffic light concept is used in many areas of the SAP system to help the user prioritize tasks. In our case, the materials with a red traffic light have a non-zero safety stock specified. As there have been no goods receipts for these materials, they are below their safety stock levels and, hence, the red lights.

It is possible to customize the traffic lights.

Click on the Define traffic lights icon ( ), which will produce the following:

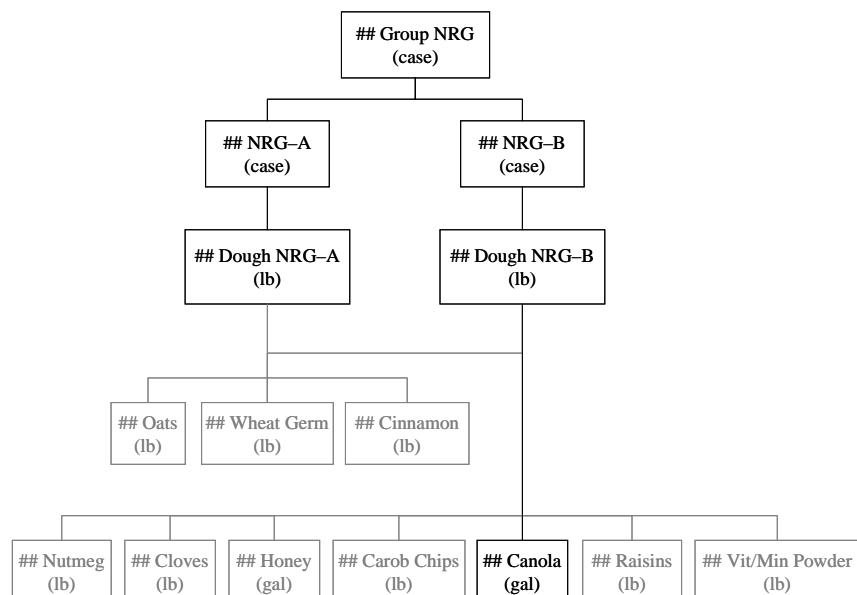
# MRP



This screen shows that the SAP system provides the user with a great deal of flexibility in how to configure the traffic light system for issuing warnings as required. Click on the cancel icon () to close this window.

We will keep the Stock/Requirements list open so that we can easily review the results of the MRP process. We will use the following materials to evaluate the MRP process (see figure below):

```
## NRG-A
## NRG-B
## Dough NRG-A
## Dough NRG-B
## Canola
```



# MRP

At this point, the Stock/Requirements list for these materials is pretty boring as there is no production scheduled.

## 5. Create Sales and Operations Plan

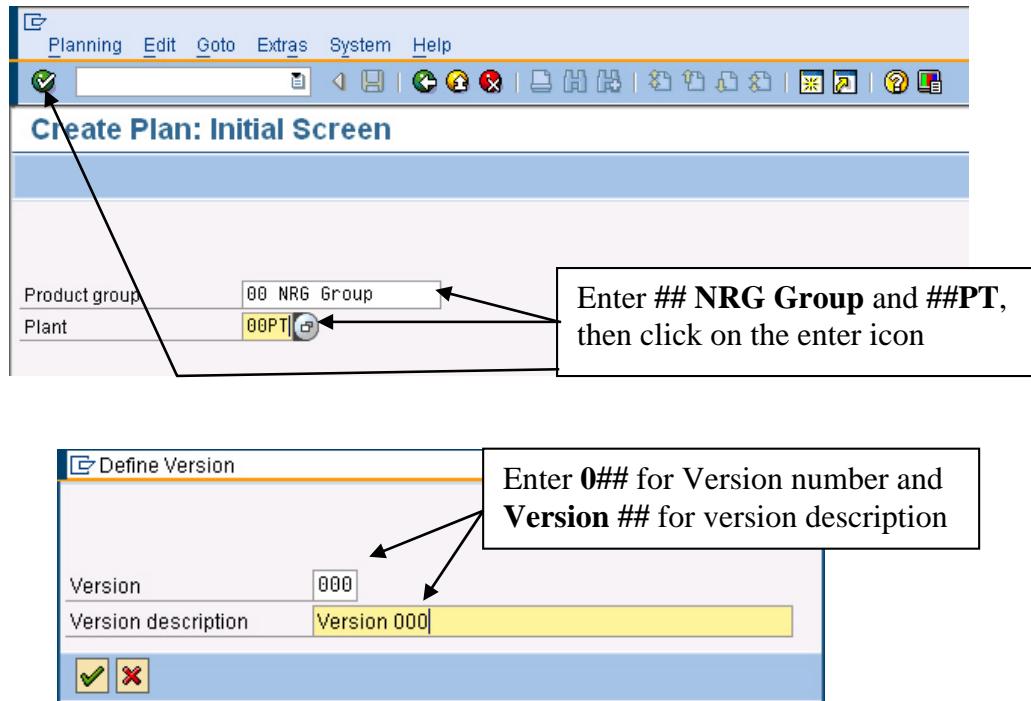
In SAP, the Sales and Operations Planning process is one way to create demand for the MRP process. In practice, Sales and Operations Planning is the process where operations and marketing agree on a demand forecast and a production plan to meet that demand. Ideally, this Sales and Operations Plan should optimize profit for the organization.

To perform Sales and Operations Planning, open a second session by following the pull-down menu path:

**System→Create session**

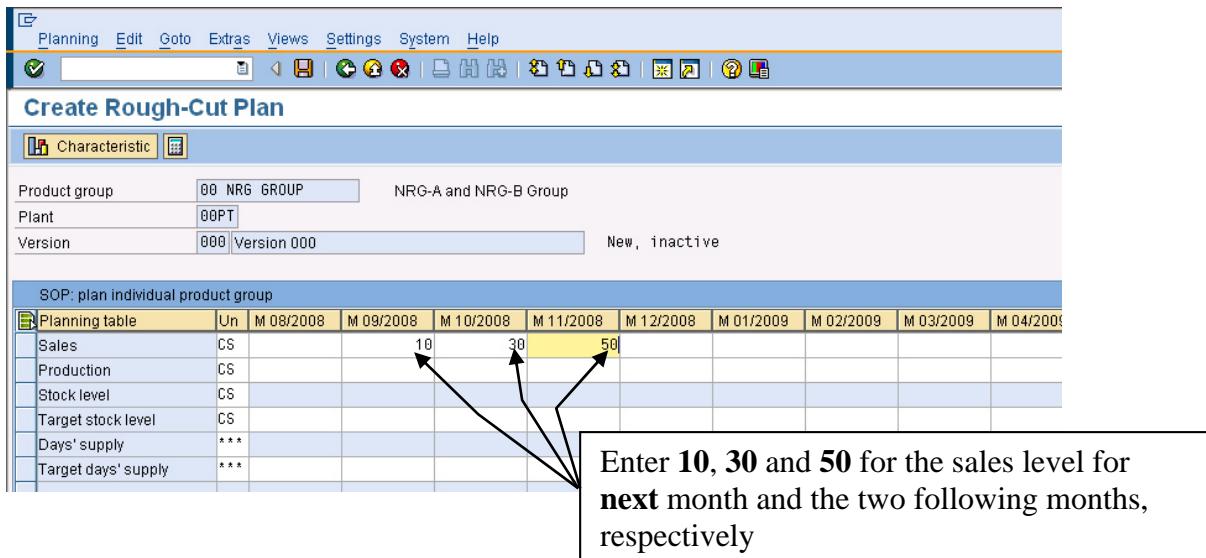
In this second session, follow the menu path:

**Logistics ▷ Production ▷ SOP ▷ Planning ▷ For Product Group ▷ Create (MC81)**



Click on the enter icon (✓), then the following screen will appear:

# MRP

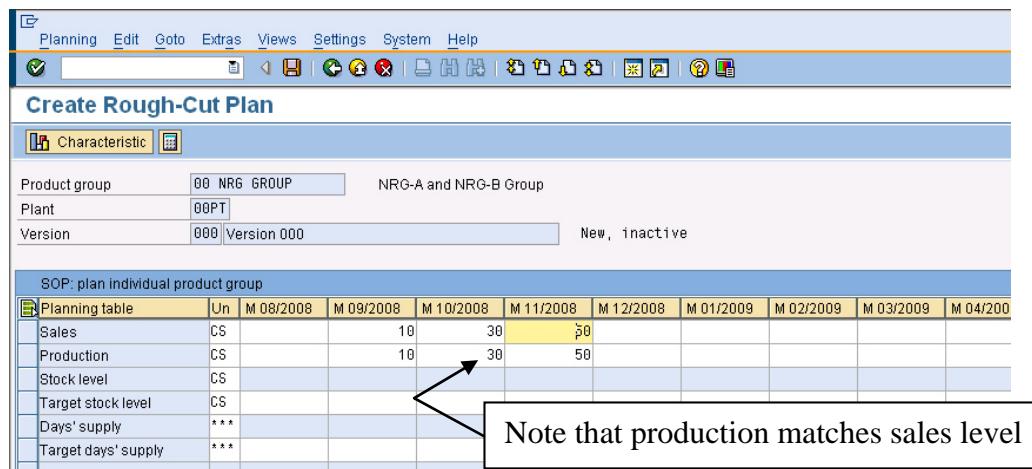


There are a number of ways to develop a sales forecast in the SAP ERP system, however, we'll just enter the values **10, 30 and 50** as the sales level for **next** month and the two following months, respectively.

There are also a number of ways to develop a production plan—for example, we can have production match sales. To do this automatically, follow the pull-down menu path:

**Edit→Create production plan→Synchronous to sales**

and the system will create a production plan that exactly matches sales:



We can also develop a plan that allows for a safety stock—a stock level above the expected sales level.

# MRP

Product group: 00 NRG GROUP (NRG-A and NRG-B Group)

Plant: 00PT

Version: 000 Version 000 New, inactive

SOP: plan individual product group

| Planning table      | Un  | M 08/2008 | M 09/2008 | M 10/2008 | M 11/2008 | M 12/2008 | M 01/2009 | M 02/2009 | M 03/2009 | M 04/2009 |
|---------------------|-----|-----------|-----------|-----------|-----------|-----------|-----------|-----------|-----------|-----------|
| Sales               | CS  |           | 10        | 30        | 50        |           |           |           |           |           |
| Production          | CS  |           | 10        | 30        | 50        |           |           |           |           |           |
| Stock level         | CS  |           |           |           |           |           |           |           |           |           |
| Target stock level  | CS  |           | 5         | 15        | 25        |           |           |           |           |           |
| Days' supply        | *** |           |           |           |           |           |           |           |           |           |
| Target days' supply | *** |           |           |           |           |           |           |           |           |           |

Enter 5, 15 and 25 for Target stock level

Follow the menu path:

**Edit→Create production plan→Target stock level**

and the system will create a production plan that allows for a Target stock level:

Product group: 00 NRG GROUP (NRG-A and NRG-B Group)

Plant: 00PT

Version: 000 Version 000 New, inactive

SOP: plan individual product group

| Planning table      | Un  | M 08/2008 | M 09/2008 | M 10/2008 | M 11/2008 | M 12/2008 | M 01/2009 | M 02/2009 | M 03/2009 | M 04/2009 |
|---------------------|-----|-----------|-----------|-----------|-----------|-----------|-----------|-----------|-----------|-----------|
| Sales               | CS  |           | 10        | 30        | 50        |           |           |           |           |           |
| Production          | CS  |           | 15        | 40        | 60        |           |           |           |           |           |
| Stock level         | CS  |           | 5         | 15        | 25        | 25        | 25        | 25        | 25        |           |
| Target stock level  | CS  |           | 5         | 15        | 25        |           |           |           |           |           |
| Days' supply        | *** |           | 15        | 15        | 15        |           |           |           |           |           |
| Target days' supply | *** |           |           |           |           |           |           |           |           |           |

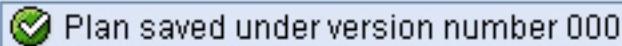
Note that the system calculates a production plan that will produce enough to meet the sales level and have the appropriate Target stock level. The system will also calculate the **Day's supply**, which is calculated as:

$$\text{Day's supply} = \frac{\text{Days in month}}{\text{Sales}} (\text{Target stock level})$$

Note that **Days in month** is taken from the factory calendar, which considers weekends, holidays and number of days in the month.

# MRP

Click on the save icon (disk) to save the Sales and Operations Plan (SOP). You should get a message like the following:



## 6. Transfer Sales and Operations Plan to Products

Next, we have to transfer the production plan developed in the SOP transaction to the products in the product group. To do this, follow the menu path:

**Logistics >Production >SOP >Disaggregation >Transfer Product Group to Planning**

The screenshot shows the SAP Disaggregation interface. A dialog box titled "Transfer Planning Data to Demand Management" is open. It contains the following fields:

|               |              |                          |
|---------------|--------------|--------------------------|
| Product group | 00 NRG GROUP | NRG-A and NRG-B Group    |
| Plant         | 00PT         | 00 Fitter Snacker Plant  |
| Version       | 000          | (with a small edit icon) |

Below these fields is a section titled "Transfer strategy and period" with the following options:

- Sales plan for material or PG members
- Sales plan for mat. or PG members as proportion of PG
- Production plan for material or PG members
- Prod.plan for mat. or PG members as proportion of PG

There are "From" and "To" date fields, and a checkbox for "Invisible transfer".

At the bottom is a section titled "Independent requirement specifications" with "Requirements type" and "Version" fields, and a checkbox for "Active".

To the right of the dialog, there is a callout box with instructions:

- Enter Product group ## **NRG GROUP** and Plant ##**PT**
- Enter **0##** for Version
- Select **Prod.plan for mat. or PG members as proportion of PG**
- Check **Invisible transfer**
- Check **Active**

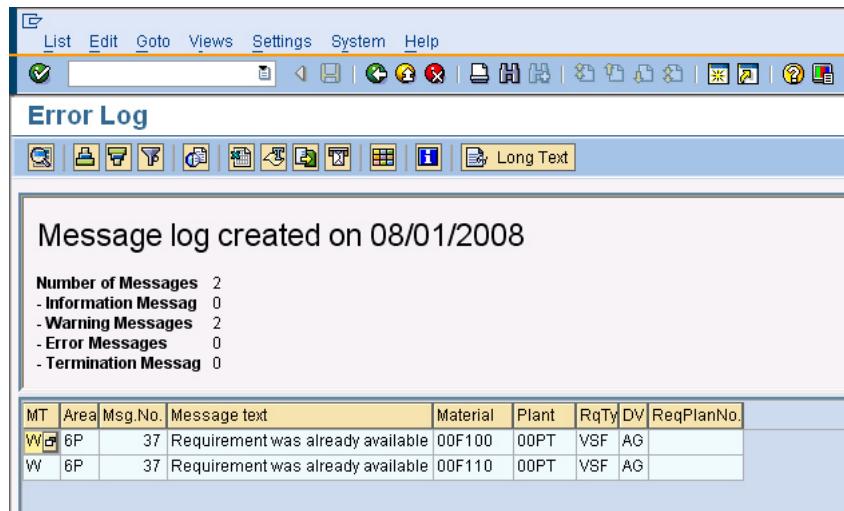
Below the callout box, it says "then click on the Transfer now icon".

Enter the information shown above, then click on the **Transfer now** icon ( ). This will produce the following screen:

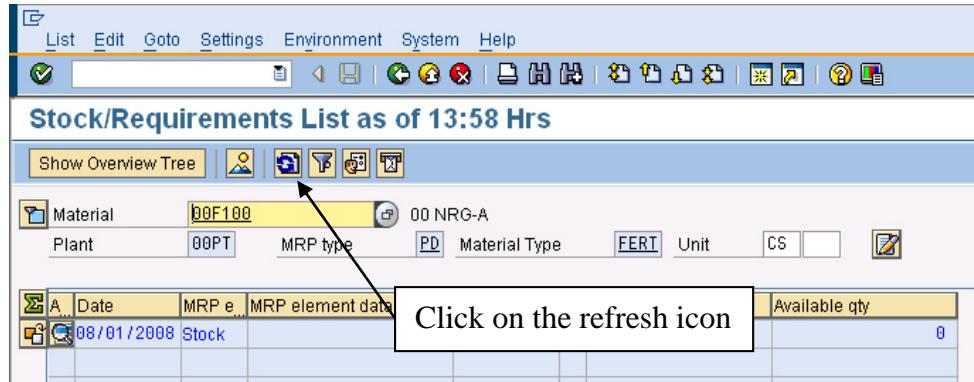


Double-check that you entered **0##** for the Version, then click on the enter icon ( ), which will produce the following message:

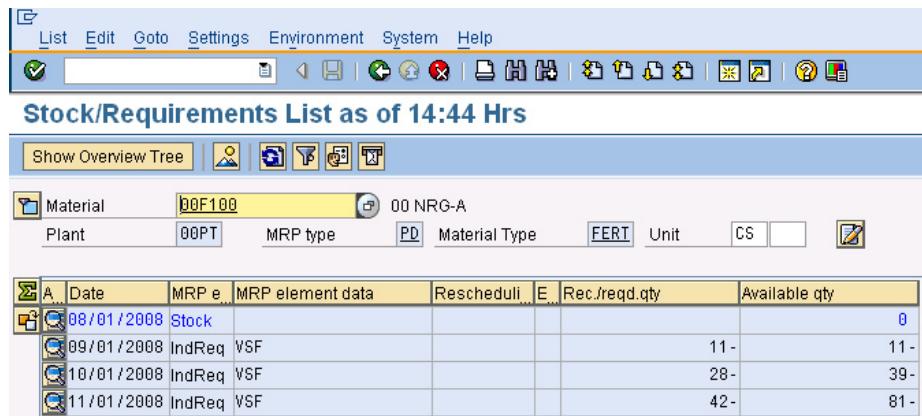
# MRP



While this sounds ominous, ignore it (it's just a warning). **Switch to the other session**, make sure you have selected the material ## NRG-A and are in the Display Stock/Requirements list screen:



The results from transferring the Sales and Operations Plan are not yet displayed. To update the Stock/Requirements list, click on the refresh icon ( ):



# MRP

Note that there are planned independent requirements for three months. Where did the quantity 11 come from in this month? In the Sales and Operations plan, the production quantity planned for NRG bars in this month was 15 (10 for sales, 5 for the target stock level). Seventy percent of 15 is 11 (actually, 10.5). Thirty percent of 15 is 4 (actually 4.5).

Check on ## Canola to verify that it has remained unchanged:

| A | Date       | MRP e... | MRP element data | Reschedule... | E | Rec./reqd.qty | Available qty |
|---|------------|----------|------------------|---------------|---|---------------|---------------|
|   | 08/01/2008 | Stock    |                  |               |   |               | 0             |

## 7. Create Planned Orders with MRP

To meet the demand that is predicted by the SOP process, the MRP process will create planned orders. These planned orders can be converted into production orders (for internally manufactured materials) and purchase requisitions (for externally procured materials). To do this, we will repeat the MRP process as we did before. To run MRP, switch back to the other session (the one without the Stock/Requirements List) and follow the menu path:

Logistics >Production >MRP >Planning >Multilevel Single-Item Planning (MD02)

Single-Item, Multi-Level

Planning Edit Goto Settings Extras System Help

Material: 00 NRG Group  
Plant: 00PT

Scope of planning  
 Product group

MRP control parameters

|                         |              |
|-------------------------|--------------|
| Processing key: NETCH   | Net chan...  |
| Create purchase req.: 2 | Purchase...  |
| Delivery schedules: 3   | Schedule...  |
| Create MRP list: 1      | MRP list...  |
| Planning mode: 1        | Adapt pla... |

Scheduling: 1 Basic da...

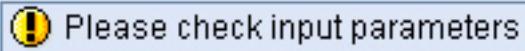
Process control parameters

- Also plan unchanged components
- Display results before they are saved
- Display material list
- Simulation mode

Enter (or search for) ## NRG GROUP for Material  
Enter ##PT for Plant  
Check **Product group** for Scope of planning  
Confirm the following MRP control parameters:  
Processing key: NETCH  
Create purchase req.: 2  
Delivery schedules: 3  
Create MRP list: 1  
Planning mode: 1  
Scheduling: 1

# MRP

Then click on the enter icon (✓). This will produce the following message:



Click on the enter icon (✓) again and you should get a report like the following:

| Single-Item, Multi-Level   |          |            |      |           |       |             |        |
|--|----------|------------|------|-----------|-------|-------------|--------|
| <b>Statistics</b>  |          |            |      |           |       |             |        |
| Materials planned  | 13       |            |      |           |       |             |        |
| Materials with new exceptions                                    | 12       |            |      |           |       |             |        |
| Materials with terminated MRP list                               |          |            |      |           |       |             |        |
| <b>Parameters</b>  |          |            |      |           |       |             |        |
| Plnt   | 00PT     |            |      |           |       |             |        |
| Processing Key   | NETCH    |            |      |           |       |             |        |
| Create Purchase Requisition                                      | 2        |            |      |           |       |             |        |
| Sched. Agreement Schedule Line                                   | 3        |            |      |           |       |             |        |
| Create MRP List  | 1        |            |      |           |       |             |        |
| Planning Mode  | 1        |            |      |           |       |             |        |
| Scheduling   | 1        |            |      |           |       |             |        |
| <b>Database statistics</b>                                       |          |            |      |           |       |             |        |
| Planned orders created   | 32       |            |      |           |       |             |        |
| Dependent requirements created                                   | 132      |            |      |           |       |             |        |
| <b>Run-time statistics</b>                                       |          |            |      |           |       |             |        |
| Start of planning run  | 13:51:47 |            |      |           |       |             |        |
| End of planning run  | 13:51:51 |            |      |           |       |             |        |
| Planning run time  | 00:00:04 |            |      |           |       |             |        |
| CPU time: net calc. and lot-size calc                            | 00:00:02 |            |      |           |       |             |        |
| ... BADI: Change char. value assgmt                              | 00:00:01 |            |      |           |       |             |        |
| CPU time: BOM explosion  | 00:00:02 |            |      |           |       |             |        |
| ... BADI: Alternative Explosion                                  | 00:00:01 |            |      |           |       |             |        |
| CPU time: update   | 00:00:01 |            |      |           |       |             |        |
| <b>Ranking list for materials with highest CPU times (in ms)</b> |          |            |      |           |       |             |        |
| Material   | Plnt     | PlgRunTime | Read | Net calc. | BOM   | LdTimeSched | Update |
| 00F100   | 00PT     | 3,721      | 38   | 1,411     | 1,972 | 0           | 219    |
| 00S200   | 00PT     | 339        | 9    | 3         | 55    | 0           | 269    |
| 00R300   | 00PT     | 115        | 10   | 85        | 0     | 0           | 18     |
| 00F110   | 00PT     | 34         | 12   | 0         | 0     | 0           | 19     |
| 00R320   | 00PT     | 31         | 9    | 1         | 0     | 0           | 18     |
| 00R410   | 00PT     | 26         | 10   | 1         | 0     | 0           | 12     |

This message shows that, because of the demand we created in the SOP process, there have been a number of calculations made in the MRP process.

# MRP

Switch to the session with the Stock/Requirements list, and look at the material **##F100** (NRG-A bars). Remember to use the refresh icon (↻):

The screenshot shows the SAP Stock/Requirements List for material **##F100**. The header indicates the list is as of 14:56 Hrs. The material number is **##F100**, plant is **00PT**, MRP type is **PD**, and material type is **FERT**. The table displays scheduled delivery dates, MRP elements, planned orders (PldOrd), reservations (Rescheduli...), required quantities (Rec./reqd.qty), and available quantities (Available qty). Arrows point from the text in the preceding paragraph to the first two rows of the table.

| A          | Date   | MRP e.          | MRP element data | Rescheduli... | E   | Rec./reqd.qty | Available qty |
|------------|--------|-----------------|------------------|---------------|-----|---------------|---------------|
| 08/01/2008 | Stock  |                 |                  |               |     | 0             |               |
| 09/01/2008 | PldOrd | 0000005232/STCK |                  |               | 7   | 7             |               |
| 09/01/2008 | PldOrd | 0000005233/STCK |                  |               | 7   | 14            |               |
| 09/01/2008 | IndReq | VSF             |                  |               | 11- | 3             |               |
| 10/01/2008 | PldOrd | 0000005234/STCK |                  |               | 7   | 10            |               |
| 10/01/2008 | PldOrd | 0000005235/STCK |                  |               | 7   | 17            |               |
| 10/01/2008 | PldOrd | 0000005236/STCK |                  |               | 7   | 24            |               |
| 10/01/2008 | PldOrd | 0000005237/STCK |                  |               | 7   | 31            |               |
| 10/01/2008 | IndReq | VSF             |                  |               | 28- | 3             |               |

Notice that the SAP system has created planned orders to meet the predicted demand

The screenshot shows the SAP Stock/Requirements List for material **##S200**. The header indicates the list is as of 14:58 Hrs. The material number is **##S200**, plant is **00PT**, MRP type is **PD**, and material type is **HALB**. The table displays scheduled delivery dates, MRP elements, planned orders (PldOrd), reservations (Rescheduli...), required quantities (Rec./reqd.qty), and available quantities (Available qty). Arrows point from the text in the preceding paragraph to the first two rows of the table.

| A          | Date   | MRP e.          | MRP element data | Rescheduli... | E   | Rec./reqd.qty | Available qty |
|------------|--------|-----------------|------------------|---------------|-----|---------------|---------------|
| 11/01/2008 | PldOrd | 0000005241/STCK |                  |               | 7   | 31            |               |
| 11/01/2008 | PldOrd | 0000005242/STCK |                  |               | 7   | 38            |               |
| 11/01/2008 | PldOrd | 0000005243/STCK |                  |               | 7   | 45            |               |
| 11/01/2008 | IndReq | VSF             |                  |               | 42- | 3             |               |

Note that the SAP system has created production orders of 7 cases (which is the fixed lot size for NRG-A bars) to meet the demand. Check on the material **##S200** (dough for NRG-A bars) by entering the material number (**##S200**) and clicking on the refresh icon (↻):

The screenshot shows the SAP Stock/Requirements List for material **##S200**. The header indicates the list is as of 14:58 Hrs. The material number is **##S200**, plant is **00PT**, MRP type is **PD**, and material type is **HALB**. The table displays scheduled delivery dates, MRP elements, planned orders (PldOrd), reservations (Rescheduli...), required quantities (Rec./reqd.qty), and available quantities (Available qty). Arrows point from the text in the preceding paragraph to the first two rows of the table.

| A          | Date   | MRP e.          | MRP element data | Rescheduli... | E    | Rec./reqd.qty | Available qty |
|------------|--------|-----------------|------------------|---------------|------|---------------|---------------|
| 08/01/2008 | Stock  |                 |                  |               |      | 0             |               |
| 08/31/2008 | PldOrd | 0000005244/STCK |                  |               | 500  | 500           |               |
| 08/31/2008 | PldOrd | 0000005245/STCK |                  |               | 500  | 1,000         |               |
| 08/31/2008 | DepReq | 00F100          |                  |               | 500- | 500           |               |
| 08/31/2008 | DepReq | 00F100          |                  |               | 500- | 0             |               |
| 09/30/2008 | PldOrd | 0000005246/STCK |                  |               | 500  | 500           |               |
| 09/30/2008 | PldOrd | 0000005247/STCK |                  |               | 500  | 1,000         |               |
| 09/30/2008 | PldOrd | 0000005248/STCK |                  |               | 500  | 1,500         |               |
| 09/30/2008 | PldOrd | 0000005249/STCK |                  |               | 500  | 2,000         |               |
| 09/30/2008 | DepReq | 00F100          |                  |               | 500- | 1,500         |               |
| 09/30/2008 | DepReq | 00F100          |                  |               | 500- | 1,000         |               |
| 09/30/2008 | DepReq | 00F100          |                  |               | 500- | 500           |               |
| 09/30/2008 | DepReq | 00F100          |                  |               | 500- | 0             |               |
| 10/31/2008 | PldOrd | 0000005250/STCK |                  |               | 500  | 500           |               |
| 10/31/2008 | PldOrd | 0000005251/STCK |                  |               | 500  | 1,000         |               |
| 10/31/2008 | PldOrd | 0000005252/STCK |                  |               | 500  | 1,500         |               |
| 10/31/2008 | PldOrd | 0000005253/STCK |                  |               | 500  | 2,000         |               |
| 10/31/2008 | PldOrd | 0000005254/STCK |                  |               | 500  | 2,500         |               |
| 10/31/2008 | PldOrd | 0000005255/STCK |                  |               | 500  | 3,000         |               |

# MRP

As the dough has a lot size for dough is 500 lb., the SAP system has create planned orders in 500 lb. batches. Check on the material ##R300, Canola:

The screenshot shows the SAP Stock/Requirements List interface. The top menu bar includes List, Edit, Goto, Settings, Environment, System, and Help. Below the menu is a toolbar with various icons. The main title is "Stock/Requirements List as of 14:59 Hrs". A sub-header "Show Overview Tree" is followed by several filter buttons. The search bar contains "Material R300" and "00 Canola". Below the search bar, filters for Plant (00PT), MRP type (PD), Material Type, ROH, Unit (GAL), and a checkbox are visible. The main table displays a list of requirements. The columns are: A, Date, MRP e., MRP element data, Reschedule, E, Rec./reqd.qty, and Available qty. The data shows a mix of Stock and DepReq entries, with dates ranging from 08/01/2008 to 10/30/2008, and quantities decreasing over time.

| A | Date       | MRP e. | MRP element data | Reschedule | E | Rec./reqd.qty | Available qty |
|---|------------|--------|------------------|------------|---|---------------|---------------|
|   | 08/01/2008 | Stock  |                  |            |   | 0             | 0             |
|   | 08/30/2008 | PldOrd | 0000005256/STPO  |            |   | 500           | 500           |
|   | 08/30/2008 | DepReq | 000S200          |            |   | 7-            | 493           |
|   | 08/30/2008 | DepReq | 000S200          |            |   | 7-            | 486           |
|   | 09/29/2008 | DepReq | 000S200          |            |   | 7-            | 479           |
|   | 09/29/2008 | DepReq | 000S200          |            |   | 7-            | 472           |
|   | 09/29/2008 | DepReq | 000S200          |            |   | 7-            | 465           |
|   | 09/29/2008 | DepReq | 000S200          |            |   | 7-            | 458           |
|   | 10/30/2008 | DepReq | 000S200          |            |   | 7-            | 451           |
|   | 10/30/2008 | DepReq | 000S200          |            |   | 7-            | 444           |
|   | 10/30/2008 | DepReq | 000S200          |            |   | 7-            | 437           |
|   | 10/30/2008 | DepReq | 000S200          |            |   | 7-            | 430           |

Note that the SAP system has created a planned order for 500 gal. of Canola to meet the predicted demand.

# Production Orders

## Purchase Additional Raw Materials

To manufacture Snack Bars, we need to purchase the remaining raw materials. Previously, we created a purchase requisition, then used the requisition to develop a production order. This time, we will create a production order directly.

**Note: We will only be purchasing and receiving the raw materials. We will not receive an invoice or make a payment to the vendor. Also, this section will only provide an overview of the purchase order process.**

Please refer back to purchase order lab for any clarifications since these two labs are related.

### 1. Purchase Order Creation

To create a purchase order, follow the menu path:

Logistics ▷ Materials Management ▷ Purchasing ▷ Purchase Order ▷ Create  
▷ Vendor Unknown (ME25)

Use order type **NB** and purchasing group **##S**.

Enter the following materials, quantities and storage location:

| Material | Description       | Qty  | Deliv. date | Storage Location (Sloc) |
|----------|-------------------|------|-------------|-------------------------|
| ##R300   | ## Canola         | 1000 |             | 100                     |
| ##R310   | ## Carob Chips    | 1000 | ↑           | 100                     |
| ##R320   | ## Cinnamon       | 500  | Two         | 100                     |
| ##R330   | ## Cloves         | 500  | Weeks       | 100                     |
| ##R340   | ## Dates          | 1000 | From        | 100                     |
| ##R350   | ## Hazelnuts      | 1000 | Today       | 100                     |
| ##R360   | ## Honey          | 500  |             | 100                     |
| ##R370   | ## Nutmeg         | 500  |             | 100                     |
| ##R390   | ## Protein Powder | 2000 |             | 100                     |
| ##R400   | ## Raisins        | 1000 |             | 100                     |
| ##R410   | ## Vit/Min Powder | 500  | ↓           | 100                     |

For the units of each material, see the screen on page 91. For plant enter **##PT** for all items. After entering information for one row, **hit the enter key**.

Select all items, and then click on **Assign Supply Source**. On the screen that comes up, choose any vendor you wish by clicking on the row for it (but use the same source for all materials to simplify the receiving process). After selecting a vendor, click the check box on the bottom left. You will repeat the supply source selection in this way for each material separately.

# Production Orders

Select all items again (by clicking the first icon on the screen menu above) and then click on Generate Purchase order (red and white circle in the menu).

Click on the item **Open requisitions** under your vendor in the vertical window on the left, then click the **Adopt** ( icon (the second icon in the menu above). Save the purchase order, ignoring any system messages. You should receive a message at the bottom of the screen to the effect that a standard PO was created. **Note down this PO number.**

## 2. Create a Goods Receipt

To create a goods receipt, follow the menu path:

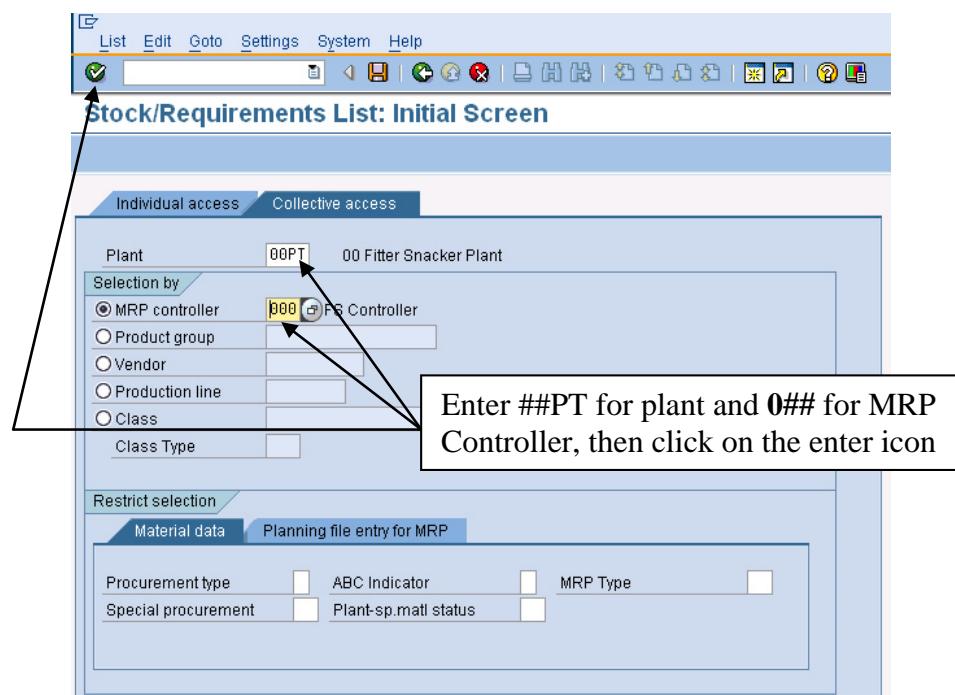
**Logistics > Materials Management > Inventory Management > Goods Movement  
> Goods Receipt > For Purchase Order > GR for Purchase Order (MIGO)**

Search for your purchase order, then click on the enter icon to call up the materials on the purchase order. Click on the check mark for every item in the purchase order (under the OK column or at the bottom of the screen), then click on the **Post** icon. You should get a message to the effect that the material document was posted.

## 3. Check Material Levels

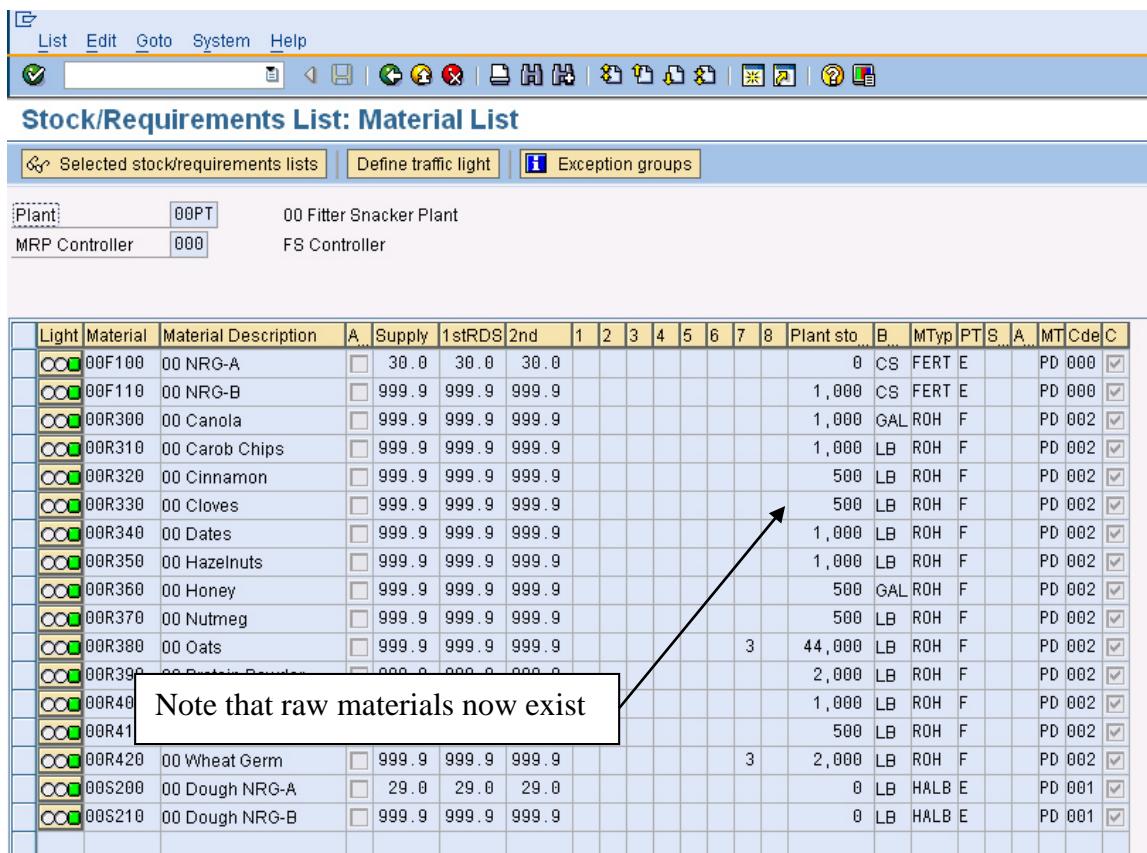
To view the Stock/Requirements list, follow the menu path:

**Logistics > Production > MRP > Evaluations > Stock/Requirements List Collective Display**



# Production Orders

Enter ##PT for the plant and 0## for MRP Controller, then click on the enter icon to produce the following screen:



The screenshot shows the SAP Stock/Requirements List: Material List interface. The table displays raw material inventories across 8 bins. A callout box highlights material 00R41 with the note "Note that raw materials now exist".

| Light  | Material       | Material Description | A | Supply | 1stRDS | 2nd   | 1 | 2 | 3 | 4 | 5 | 6 | 7 | 8 | Plant sto | B     | MTyp | PT   | S | A  | MT  | Cde                                 | C                                   |
|--------|----------------|----------------------|---|--------|--------|-------|---|---|---|---|---|---|---|---|-----------|-------|------|------|---|----|-----|-------------------------------------|-------------------------------------|
| 00F100 | 00 NRG-A       |                      |   | 30.0   | 30.0   | 30.0  |   |   |   |   |   |   |   |   | 0         | CS    | FERT | E    |   | PD | 000 | <input checked="" type="checkbox"/> |                                     |
| 00F110 | 00 NRG-B       |                      |   | 999.9  | 999.9  | 999.9 |   |   |   |   |   |   |   |   | 1,000     | CS    | FERT | E    |   | PD | 000 | <input checked="" type="checkbox"/> |                                     |
| 00R300 | 00 Canola      |                      |   | 999.9  | 999.9  | 999.9 |   |   |   |   |   |   |   |   | 1,000     | GAL   | ROH  | F    |   | PD | 002 | <input checked="" type="checkbox"/> |                                     |
| 00R310 | 00 Carob Chips |                      |   | 999.9  | 999.9  | 999.9 |   |   |   |   |   |   |   |   | 1,000     | LB    | ROH  | F    |   | PD | 002 | <input checked="" type="checkbox"/> |                                     |
| 00R320 | 00 Cinnamon    |                      |   | 999.9  | 999.9  | 999.9 |   |   |   |   |   |   |   |   | 500       | LB    | ROH  | F    |   | PD | 002 | <input checked="" type="checkbox"/> |                                     |
| 00R330 | 00 Cloves      |                      |   | 999.9  | 999.9  | 999.9 |   |   |   |   |   |   |   |   | 500       | LB    | ROH  | F    |   | PD | 002 | <input checked="" type="checkbox"/> |                                     |
| 00R340 | 00 Dates       |                      |   | 999.9  | 999.9  | 999.9 |   |   |   |   |   |   |   |   | 1,000     | LB    | ROH  | F    |   | PD | 002 | <input checked="" type="checkbox"/> |                                     |
| 00R350 | 00 Hazelnuts   |                      |   | 999.9  | 999.9  | 999.9 |   |   |   |   |   |   |   |   | 1,000     | LB    | ROH  | F    |   | PD | 002 | <input checked="" type="checkbox"/> |                                     |
| 00R360 | 00 Honey       |                      |   | 999.9  | 999.9  | 999.9 |   |   |   |   |   |   |   |   | 500       | GAL   | ROH  | F    |   | PD | 002 | <input checked="" type="checkbox"/> |                                     |
| 00R370 | 00 Nutmeg      |                      |   | 999.9  | 999.9  | 999.9 |   |   |   |   |   |   |   |   | 500       | LB    | ROH  | F    |   | PD | 002 | <input checked="" type="checkbox"/> |                                     |
| 00R380 | 00 Oats        |                      |   | 999.9  | 999.9  | 999.9 |   |   |   |   |   |   |   |   | 44,000    | LB    | ROH  | F    |   | PD | 002 | <input checked="" type="checkbox"/> |                                     |
| 00R390 | 00 Pecan Nuts  |                      |   | 999.9  | 999.9  | 999.9 |   |   |   |   |   |   |   |   | 2,000     | LB    | ROH  | F    |   | PD | 002 | <input checked="" type="checkbox"/> |                                     |
| 00R40  |                |                      |   |        |        |       |   |   |   |   |   |   |   |   | 1,000     | LB    | ROH  | F    |   | PD | 002 | <input checked="" type="checkbox"/> |                                     |
| 00R41  |                |                      |   |        |        |       |   |   |   |   |   |   |   |   | 500       | LB    | ROH  | F    |   | PD | 002 | <input checked="" type="checkbox"/> |                                     |
| 00R420 | 00 Wheat Germ  |                      |   | 999.9  | 999.9  | 999.9 |   |   |   |   |   |   |   |   | 3         | 2,000 | LB   | ROH  | F |    | PD  | 002                                 | <input checked="" type="checkbox"/> |
| 00S200 | 00 Dough NRG-A |                      |   | 29.0   | 29.0   | 29.0  |   |   |   |   |   |   |   |   |           | 0     | LB   | HALB | E |    | PD  | 001                                 | <input checked="" type="checkbox"/> |
| 00S210 | 00 Dough NRG-B |                      |   | 999.9  | 999.9  | 999.9 |   |   |   |   |   |   |   |   |           | 0     | LB   | HALB | E |    | PD  | 001                                 | <input checked="" type="checkbox"/> |

You should now have inventory on hand for all raw materials.

## 4. Create Production Order for ## Dough NRG-A

The MRP system merely suggests production orders to the scheduler, which is why they are called **planned orders**. To create a production order, the planned order must be converted. To do this, select the material ##S200 (dough for NRG-A bars) in the Stock/Requirements list: Material List, then click on the display selected Stock/Requirement lists icon (

):

Note that all display buttons in SAP are accompanied with the picture of a pair of reading glasses

# Production Orders

List Edit Goto System Help

Stock/Requirements List: Material List

Selected stock/requirements lists   Define traffic light   Exception groups

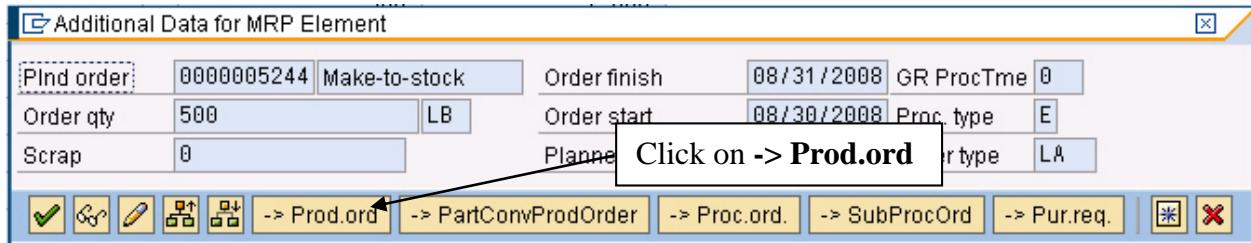
| Plant          | 00OPT    | 00 Fitter Snacker Plant                                |                          |        |        |       |   |   |   |   |   |   |   |   |           |     |      |    |   |        |                                     |   |
|----------------|----------|--|--------------------------|--------|--------|-------|---|---|---|---|---|---|---|---|-----------|-----|------|----|---|--------|-------------------------------------|---|
| MRP Controller | 000      | FS Controller  |                          |        |        |       |   |   |   |   |   |   |   |   |           |     |      |    |   |        |                                     |   |
|                |          | Select ##S200 (dough for NRG-A), then click on display |                          |        |        |       |   |   |   |   |   |   |   |   |           |     |      |    |   |        |                                     |   |
| Light          | Material | Material Description                                   | A                        | Supply | 1stRDS | 2nd   | 1 | 2 | 3 | 4 | 5 | 6 | 7 | 8 | Plant sto | B   | MTyp | PT | S | A      | MTcde                               | C |
|                | 00S200   | 00 Dough NRG-A   | <input type="checkbox"/> | 29.0   | 29.0   | 29.0  |   |   |   |   |   |   |   |   | 0         | LB  | HALB | E  |   | PD 001 | <input checked="" type="checkbox"/> |   |
|                | 00F100   | 00 NRG-A   | <input type="checkbox"/> | 30.0   | 30.0   | 30.0  |   |   |   |   |   |   |   |   | 0         | CS  | FERT | E  |   | PD 000 | <input checked="" type="checkbox"/> |   |
|                | 00F110   | 00 NRG-B   | <input type="checkbox"/> | 999.9  | 999.9  | 999.9 |   |   |   |   |   |   |   |   | 1,000     | CS  | FERT | E  |   | PD 000 | <input checked="" type="checkbox"/> |   |
|                | 00R300   | 00 Canola  | <input type="checkbox"/> | 999.9  | 999.9  | 999.9 |   |   |   |   |   |   |   |   | 1,000     | GAL | ROH  | F  |   | PD 002 | <input checked="" type="checkbox"/> |   |
|                | 00R310   | 00 Carb Chips  | <input type="checkbox"/> | 999.9  | 999.9  | 999.9 |   |   |   |   |   |   |   |   | 1,000     | LB  | ROH  | F  |   | PD 002 | <input checked="" type="checkbox"/> |   |
|                | 00R320   | 00 Cinnamon  | <input type="checkbox"/> | 999.9  | 999.9  | 999.9 |   |   |   |   |   |   |   |   | 500       | LB  | ROH  | F  |   | PD 002 | <input checked="" type="checkbox"/> |   |
|                | 00R330   | 00 Cloves  | <input type="checkbox"/> | 999.9  | 999.9  | 999.9 |   |   |   |   |   |   |   |   | 500       | LB  | ROH  | F  |   | PD 002 | <input checked="" type="checkbox"/> |   |
|                | 00R340   | 00 Dates   | <input type="checkbox"/> | 999.9  | 999.9  | 999.9 |   |   |   |   |   |   |   |   | 1,000     | LB  | ROH  | F  |   | PD 002 | <input checked="" type="checkbox"/> |   |
|                | 00R350   | 00 Hazelnuts   | <input type="checkbox"/> | 999.9  | 999.9  | 999.9 |   |   |   |   |   |   |   |   | 1,000     | LB  | ROH  | F  |   | PD 002 | <input checked="" type="checkbox"/> |   |
|                | 00R360   | 00 Honey   | <input type="checkbox"/> | 999.9  | 999.9  | 999.9 |   |   |   |   |   |   |   |   | 500       | GAL | ROH  | F  |   | PD 002 | <input checked="" type="checkbox"/> |   |
|                | 00R370   | 00 Nutmeg  | <input type="checkbox"/> | 999.9  | 999.9  | 999.9 |   |   |   |   |   |   |   |   | 500       | LB  | ROH  | F  |   | PD 002 | <input checked="" type="checkbox"/> |   |
|                | 00R380   | 00 Oats  | <input type="checkbox"/> | 999.9  | 999.9  | 999.9 |   |   |   |   |   |   |   | 3 | 44,000    | LB  | ROH  | F  |   | PD 002 | <input checked="" type="checkbox"/> |   |
|                | 00R390   | 00 Protein Powder                                      | <input type="checkbox"/> | 999.9  | 999.9  | 999.9 |   |   |   |   |   |   |   |   | 2,000     | LB  | ROH  | F  |   | PD 002 | <input checked="" type="checkbox"/> |   |
|                | 00R400   | 00 Raisins   | <input type="checkbox"/> | 999.9  | 999.9  | 999.9 |   |   |   |   |   |   |   |   | 1,000     | LB  | ROH  | F  |   | PD 002 | <input checked="" type="checkbox"/> |   |
|                | 00R410   | 00 Vit/Min Powder                                      | <input type="checkbox"/> | 999.9  | 999.9  | 999.9 |   |   |   |   |   |   |   |   | 500       | LB  | ROH  | F  |   | PD 002 | <input checked="" type="checkbox"/> |   |
|                | 00R420   | 00 Wheat Germ  | <input type="checkbox"/> | 999.9  | 999.9  | 999.9 |   |   |   |   |   |   |   | 3 | 2,000     | LB  | ROH  | F  |   | PD 002 | <input checked="" type="checkbox"/> |   |
|                | 00S210   | 00 Dough NRG-B   | <input type="checkbox"/> | 999.9  | 999.9  | 999.9 |   |   |   |   |   |   |   |   | 0         | LB  | HALB | E  |   | PD 001 | <input checked="" type="checkbox"/> |   |

The screenshot shows the SAP Stock Requirements List as of 21:26 Hrs. The top navigation bar includes List, Edit, Goto, Settings, Environment, System, and Help. Below the title, there are buttons for Show Overview Tree, Print, Filter, and Sort. The main area displays a table with the following columns: A (Action), Date, MRP e., MRP element data, Rescheduled, E, Rec./reqd.qty, and Available qty.

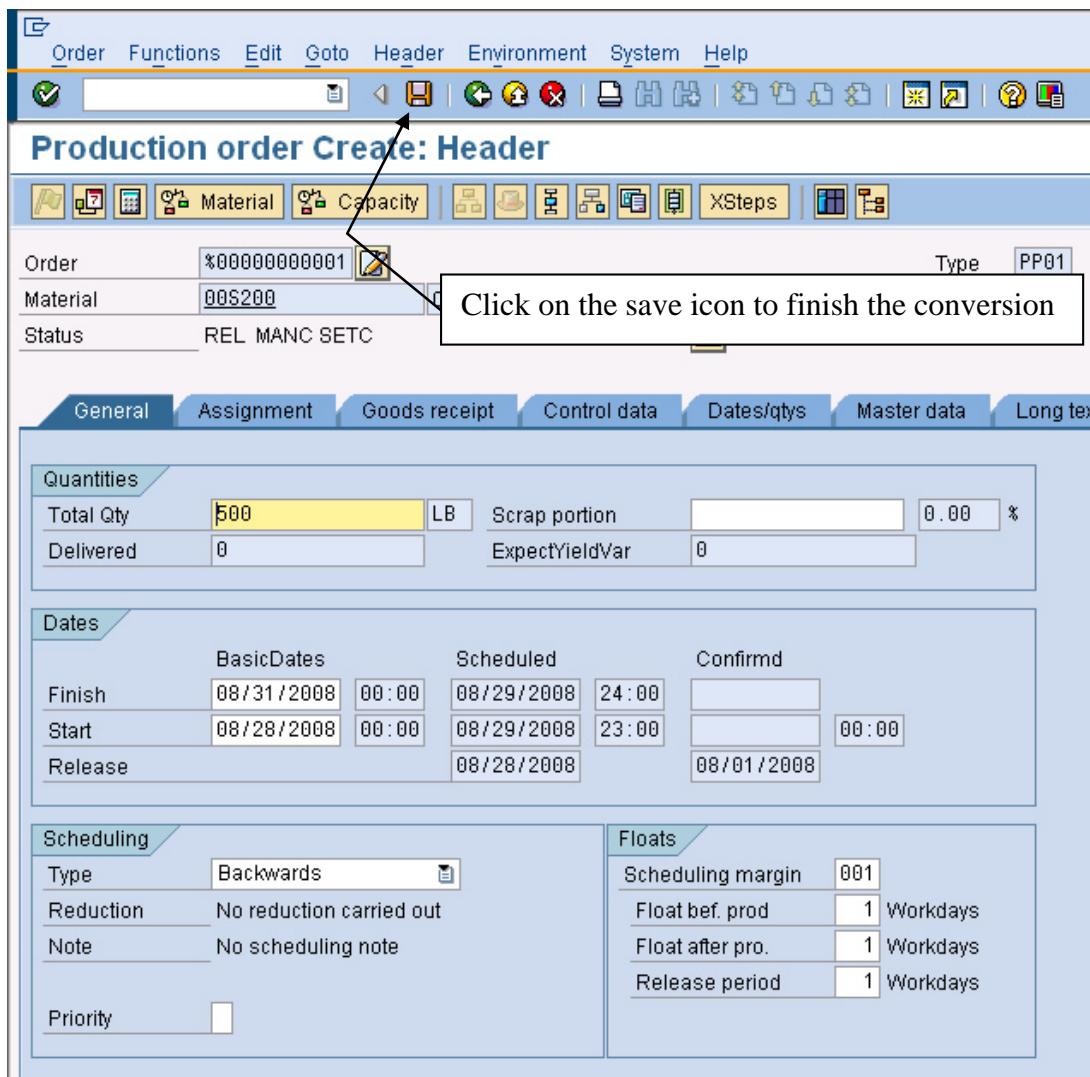
| A | Date       | MRP e. | MRP element data | Rescheduled | E | Rec./reqd.qty | Available qty |
|---|------------|--------|------------------|-------------|---|---------------|---------------|
|   | 08/01/2008 | Stock  |                  |             |   |               | 0             |
|   | 08/31/2008 | PldOrd | 0000005244/STCK  |             |   | 500           | 500           |
|   | 08/31/2008 | PldOrd | 0000005245/STCK  |             |   | 500           | 1,000         |
|   | 08/31/2008 | DepReq | 00F100           |             |   |               | 500           |
|   | 08/31/2008 | DepReq | 00F100           |             |   |               | 0             |
|   | 09/30/2008 | PldOrd | 0000005246/STCK  |             |   | 500           | 500           |
|   | 09/30/2008 | PldOrd | 0000005247/STCK  |             |   | 500           | 1,000         |
|   | 09/30/2008 | PldOrd | 0000005248/STCK  |             |   | 500           | 1,500         |
|   | 09/30/2008 | PldOrd | 0000005249/STCK  |             |   | 500           | 2,000         |
|   | 09/30/2008 | DepReq | 00F100           |             |   | 500-          | 1,500         |
|   | 09/30/2008 | DepReq | 00F100           |             |   | 500-          | 1,000         |
|   | 09/30/2008 | DepReq | 00F100           |             |   | 500-          | 500           |
|   | 09/30/2008 | DepReq | 00F100           |             |   | 500-          | 0             |
|   | 10/31/2008 | PldOrd | 0000005250/STCK  |             |   | 500           | 500           |
|   | 10/31/2008 | PldOrd | 0000005251/STCK  |             |   | 500           | 1,000         |
|   | 10/31/2008 | PldOrd | 0000005252/STCK  |             |   | 500           | 1,500         |

# Production Orders

Double-click on the first planned order, which should bring up the following screen:

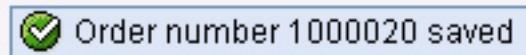


Click on the Prod.Ord button (that converts planned orders to production orders) Icon ( **-> Prod.ord** ), which will produce the following screen:



# Production Orders

You should get a message like the following:



Switch back to the Stock Requirements list. Click on the refresh icon () to see the production order:

The screenshot shows the SAP Stock Requirements List interface. At the top, there's a toolbar with various icons. Below it, the title bar says "Stock/Requirements List as of 22:12 Hrs". The main area has several input fields: "Material" set to "005200", "Plant" set to "00PT", "MRP type" set to "PD", "Material Type" set to "HALB", and "Unit". Below these, a table lists requirements. The first row shows "08/01/2008" with status "Stock". The second row, which is highlighted, shows "08/31/2008" with status "PrdOrd" and details "000001000020/PP01/Re". The third row shows "08/31/2008" with status "PldOrd" and details "0000005245/STCK". A callout box with a black arrow points from the text "The planned order (PldOrd) is now a production order (PrdOrd)" to the second row in the table.

| SUM | A... | Date       | MRP e... | MRP element data     | Reschedule... | E... | Rec./reqd.qty |
|-----|------|------------|----------|----------------------|---------------|------|---------------|
|     |      | 08/01/2008 | Stock    |                      |               |      |               |
|     |      | 08/31/2008 | PrdOrd   | 000001000020/PP01/Re |               |      |               |
|     |      | 08/31/2008 | PldOrd   | 0000005245/STCK      |               |      |               |

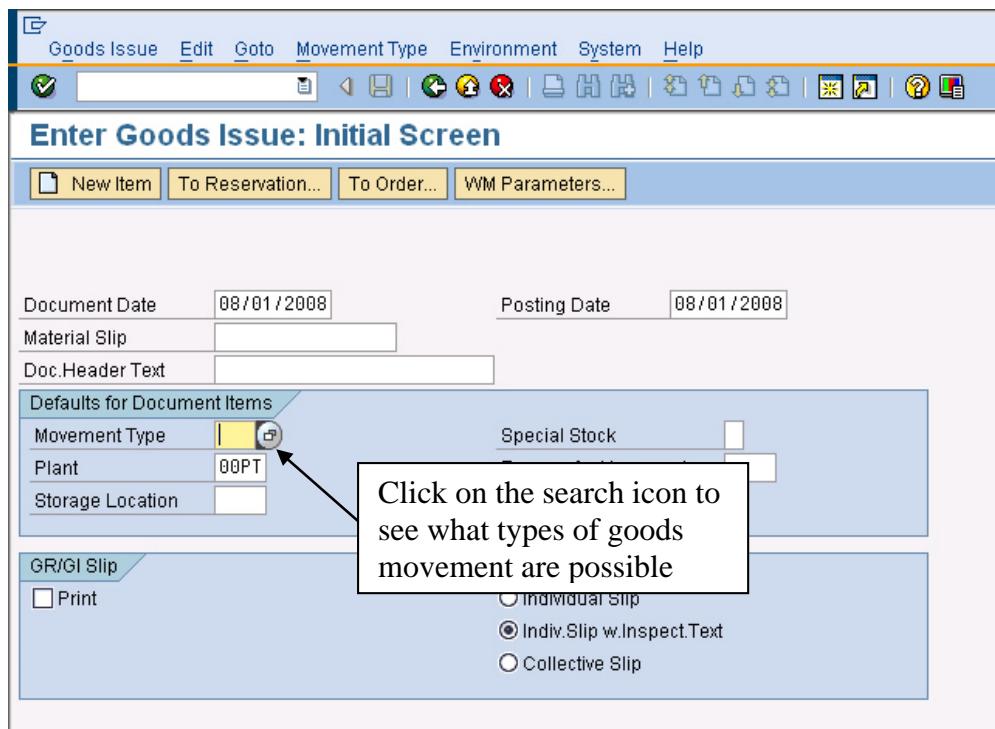
## 5. Goods Issue

To complete the production order for ## Dough NRG-A, we need to issue the raw materials that make up the dough so they can be taken to the mixer and mixed into dough. To issue good (raw materials) to the production order, follow the menu path:

**Logistics > Production > Shop Floor Control > Goods Movement > Goods Issue (MB1A)**

which will produce the following screen:

# Production Orders



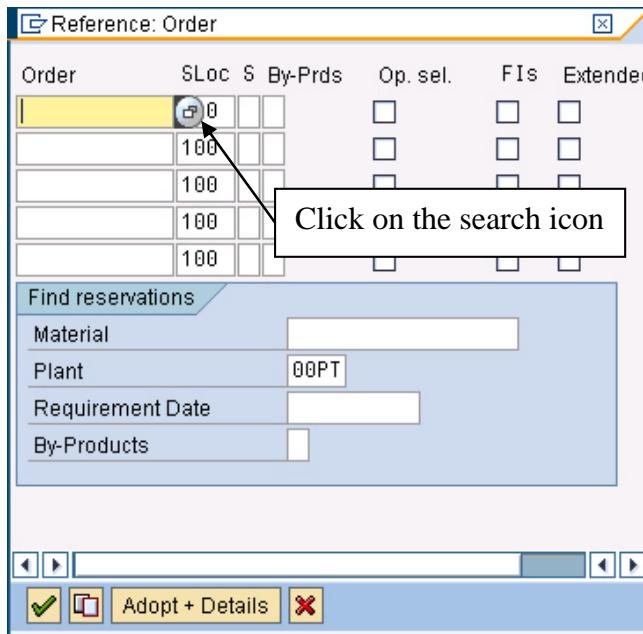
Now, you will see the types of goods movements possible:

| Movement Type (2) 140 Entries found |   |  |       |
|-------------------------------------|---|--|-------|
| Restrictions                        |   |  |       |
| MVT                                 | S | Text   | INDEX |
| 201                                 |   | Consumption for cost center from warehouse                   | 201   |
| 201 K                               |   | Consumption for cost center from consignment stores          | 201K  |
| 201 P                               |   | Consumption for cost center from pipeline                    | 201P  |
| 202                                 |   | Consumption for cost center from warehouse - reversal        | 202   |
| 202 K                               |   | Consumption for cost center from consignment - reversal      | 202K  |
| 202 P                               |   | Consumption for cost center from pipeline - reversal         | 202P  |
| 221                                 |   | Consumption for project from warehouse                       | 221   |
| 221 K                               |   | Consumption for project from consignment                     | 221K  |
| 221 Q                               |   | Consumption for project from project                         | 221Q  |
| 222                                 |   | Consumption for project from warehouse - reversal            | 222   |
| 222 K                               |   | Consumption for project from consignment - reversal          | 222K  |
| 222 Q                               |   | Consumption for project from project - reversal              | 222Q  |
| 231                                 |   | Consumption for sales order from warehouse                   | 231   |
| 231 E                               |   | Consumption for sales order from unrestr. sales order stock  | 231E  |
| 231 K                               |   | Consumption for sales order from consignment stores          | 231K  |
| 231 Q                               |   | Consumption for sales order from unrestricted project stock  | 231Q  |
| 232                                 |   | Consumption for sales order from warehouse - reversal        | 232   |
| 232 E                               |   | Consumption for sales order from unr. sales order - reversal | 232E  |
| 232 K                               |   | Consumption for sales order from consignment - reversal      | 232K  |
| 232 Q                               |   | Consumption for sales order from unrestricted project - rev. | 232Q  |
| 241                                 |   | Consumption for asset from warehouse                         | 241   |
| 241 K                               |   | Consumption for asset from consignment                       | 241K  |
| 242                                 |   | Consumption for asset from warehouse - reversal              | 242   |
| 242 K                               |   | Consumption for asset from consignment - reversal            | 242K  |
| 251                                 |   | Consumption for sales from warehouse                         | 251   |

140 Entries found

# Production Orders

There are a lot of types of goods movements allowed by the SAP system. Select movement type **261 (goods issue to consumption for order from warehouse)**. Enter storage location **100**, then click on the To order icon (**To Order...**):



This will call up the following search screen:

