

# 28.15. Wastage Prediction due to expiry when ordering

## The problem

Prior to mSupply v7.12, when ordering or reporting on suggested ordering, you could simply tell mSupply to ignore stock that was going to expiry in three or four months time. mSupply would then lower it's stock level and order according to usages.

So previously if you asked mSupply to ignore stock that is likely to expire within the next six months while ordering or reporting, then mSupply would simply reduce the Stock on hand of the items by taking out the six months expiring stock as un-usable and then created a order based on the reduce stock. This is highly inaccurate as mSupply just removes the six months expiring stock instead of trying to workout if the stock can be dispensed in a timely manner.

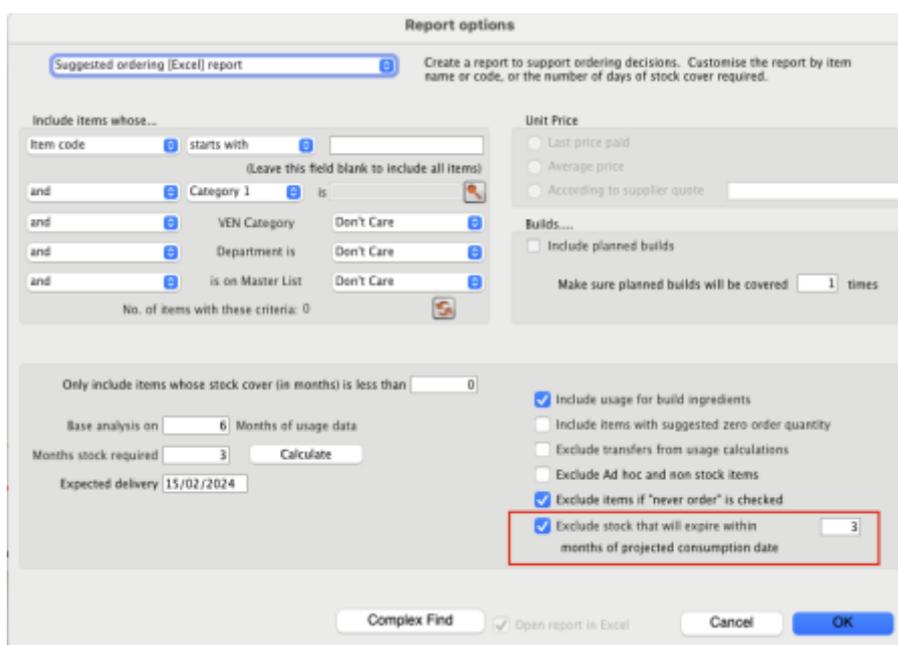
Due to popular demand with mSupply v7.12 we have tried to do a better job of predicting stock wastage due to expiry. Using the consumption data that we have, we have travelled into the future and worked out the likely wastage stock. This page describes the workflow.

## Suggested Order reports

Lets look at a report in mSupply v7.12 or later.

From mSupply activate the menu :

- Report > Purchasing > Suggested Order quantities...



The Suggested ordering report now has a new/updated expiry filter checkbox : *Exclude stock that will*

*expire within 3 months of projected consumption date*

This checkbox accurately takes into account the likelihood of current stock expiring in the future based on the monthly calculated consumption for an item while determining the suggested order quantities. Previously you could tell mSupply to ignore stock that was close to expiry by say 3 or 6 months when calculating quantities, however this is approximate.

With mSupply version v7.12, mSupply has the option to accurately analyse the stock quantities that can't be distributed due the consumption rate and the expiry date of the stock. This results in a more accurate estimate of the suggested order quantities.

### The workflow :

Imagine we have the following batches for an item.

Item	Batch	Stock	Expiry
Amoxicillin/ Clavulanic acid 30mg	b12-2023	500	12/2023
Amoxicillin/ Clavulanic acid 30mg	b06-2024	550	06/2024
Amoxicillin/ Clavulanic acid 30mg	b06-2025	100	06/2025

- Imagine the current date is 1/1/2024
- Imagine the AMC is 50
- Imagine you need stock for 12 months.
- When running the report this is checked : **Exclude stock that will expire within 3 months of projected consumption date**

When the above report is run, mSupply will immediately ignore the batch `b12-2023` as it has already expired as the current date is `1/1/2024`.

For batch `b06-2024` : mSupply works out that you can only dispense this batch till the end of March 2024, due to the set 3 months cut-off date for expiry. So the months that this stock can be dispensed are :

- January 2024
- February 2024
- March 2024

So the stock that can be used from batch `b06-2024` is :  $3 * 50 = 150$ . ( In the reports that you will see in the future, this is known as **effective stock** ) So the wasted quantity for batch `b06-2024` is :  $550 - 150 = 300$  (This is expiring stock, 300 will need to be thrown away. In the reports that you will see in the future, this is shown as **Expiring stock** )

For batch `b06-2025` : So from April 2024, mSupply will need to start using this batch for distribution. So this is 9 months remaining from April 2024 - to December 2024. However with a stock of just `100` this item will be used up during the following two months :

- April 2024
- May 2024

So for batch `b06-2025` all the stock will be used up and they will be no wastage.

However we now have 7 months starting from June 2024 till the end of December 2024 where we

don't have any stock, so mSupply will suggest a immediate order of :  $7 * 50 = 350$  to cope with the 12 months starting from `1/1/2024`

mSupply has effectively time travelled into the future to work out the **Effective Stock on hand (SOH)** and the order will be carried out based on this and not the current stock on hand.

## New Columns on Suggested order reports and changes

Now the suggested ordering reports will have two new column :

- Effective SOH (Stock on Hand) : From above this is the stock quantities that can be used before they expire.
- Expiring stock : This is the stock quantity that can't be used due to predicted expiry and cut-off date.

The `Effective Month of Stock` is now calculated from the `Effective SOH` and not from the `Stock on Hand`. The `Suggested order` is now calculated from the `Effective SOH` and the `Effective Month of Stock`.

Item	Item Code	Item Name	SN	Item category	Stock on hand	Effective SOH	Expiring stock	Backorder	Stock on Order	AMC 12 mths	AMC 24 mths	Months until for the last 6 months	Effective Month of Stock	Ordered quantity used	Suggested order	Potential used
Pharmacy stock	11005	Acetaminophen Tablet 500mg	N	Analgesic, Antipyretic, Muscle Relaxant	0	0	0	0	0	0	0	0	1/1/24	0	350	0
Pharmacy stock	11001	Ascorbic Tablet 50%	B	Vitamin Supplement	100	100	0	0	0	12	0	0	1/1/24	0	100	0
Pharmacy stock	11002	Ascorbic Eye Solution 5%	B	Eye Solution	20	20	0	0	0	0	0	0	1/1/24	0	20	0
Pharmacy stock	11003	Aspirin - 50mg	P	Analgesic	0	0	0	0	0	0	0	0	1/1/24	0	0	0
Pharmacy stock	11100	Amoxicillin 250mg/500mg tablet for usage 500mg	N	Antibiotic	0	0	0	0	0	0	0	0	1/1/24	0	0	0
Pharmacy stock	11011	Amoxicillin Capsule 500mg	N	Antibiotic	0	0	0	0	0	0	0	0	1/1/24	0	0	0
Pharmacy stock	11012	Amoxicillin Capsule 250mg	N	Antibiotic	0	0	0	0	0	0	0	0	1/1/24	0	0	0
Pharmacy stock	11013	Amoxicillin/Clavulanic Acid Tablet 500mg	N	Antibiotic	0	0	0	0	0	0	0	0	1/1/24	0	0	0
Pharmacy stock	11014	Amoxicillin Tablet 500mg	N	Antibiotic	0	0	0	0	0	0	0	0	1/1/24	0	0	0
Pharmacy stock	11015	Amoxicillin Tablet 250mg	N	Antibiotic	0	0	0	0	0	0	0	0	1/1/24	0	0	0
Pharmacy stock	11016	Amoxicillin Tablet 125mg	N	Antibiotic	0	0	0	0	0	0	0	0	1/1/24	0	0	0
Pharmacy stock	11017	Amoxicillin Tablet 500mg	N	Antibiotic	0	0	0	0	0	0	0	0	1/1/24	0	0	0
Pharmacy stock	11018	Amoxicillin Tablet 250mg	N	Antibiotic	0	0	0	0	0	0	0	0	1/1/24	0	0	0
Pharmacy stock	11019	Amoxicillin Tablet 125mg	N	Antibiotic	0	0	0	0	0	0	0	0	1/1/24	0	0	0
Pharmacy stock	11020	Amoxicillin Tablet 500mg	N	Antibiotic	0	0	0	0	0	0	0	0	1/1/24	0	0	0
Pharmacy stock	11021	Amoxicillin Tablet 250mg	N	Antibiotic	0	0	0	0	0	0	0	0	1/1/24	0	0	0
Pharmacy stock	11022	Amoxicillin Tablet 125mg	N	Antibiotic	0	0	0	0	0	0	0	0	1/1/24	0	0	0
Pharmacy stock	11023	Amoxicillin Tablet 500mg	N	Antibiotic	0	0	0	0	0	0	0	0	1/1/24	0	0	0
Pharmacy stock	11024	Amoxicillin Tablet 250mg	N	Antibiotic	0	0	0	0	0	0	0	0	1/1/24	0	0	0
Pharmacy stock	11025	Amoxicillin Tablet 125mg	N	Antibiotic	0	0	0	0	0	0	0	0	1/1/24	0	0	0
Pharmacy stock	11026	Amoxicillin Tablet 500mg	N	Antibiotic	0	0	0	0	0	0	0	0	1/1/24	0	0	0
Pharmacy stock	11027	Amoxicillin Tablet 250mg	N	Antibiotic	0	0	0	0	0	0	0	0	1/1/24	0	0	0
Pharmacy stock	11028	Amoxicillin Tablet 125mg	N	Antibiotic	0	0	0	0	0	0	0	0	1/1/24	0	0	0
Pharmacy stock	11029	Amoxicillin Tablet 500mg	N	Antibiotic	0	0	0	0	0	0	0	0	1/1/24	0	0	0
Pharmacy stock	11030	Amoxicillin Tablet 250mg	N	Antibiotic	0	0	0	0	0	0	0	0	1/1/24	0	0	0
Pharmacy stock	11031	Amoxicillin Tablet 125mg	N	Antibiotic	0	0	0	0	0	0	0	0	1/1/24	0	0	0

## Generating a Purchase order and Tender

The same logic is now applied when generating a purchase order or a tender. Like with the reports, we can ask mSupply to calculate potential stock wastage and order an appropriate quantity.

**New order**

Order for all suppliers  

Every item will be evaluated to see if it has enough stock.  
Warning- this can take a few minutes with a big data file.

Separate order for each supplier

Other info....

Months stock required

Use the last  months usage to calculate average usage

Comment

Requested delivery date

- Exclude transfers from usage calculations
- Include usage for build ingredients
- Include items with suggested zero order quantity
- Exclude stock that will expire within  months of projected consumption date

Builds....

Include planned builds

Make sure planned builds will be covered  times

From:  
<https://docs.msupply.org.nz/> - mSupply documentation wiki

Permanent link:  
[https://docs.msupply.org.nz/faq:wastage\\_prediction\\_due\\_to\\_expiry\\_v7-12](https://docs.msupply.org.nz/faq:wastage_prediction_due_to_expiry_v7-12)

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