

# INVENTORY CURRENT VALUE

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It should be easy to calculate the *Inventory Current Value*. You take how many units you have left in stock and multiply them by how much they cost, and that's how much your inventory is worth. Except that sometimes when you run your *Inventory Current Value Report* (or data export), you don't get the results you expect. How can that happen?

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# Inventory Current Value in a Perfect World

In a perfect world, all inventory receipts get entered in chronological order *before* any product leaves the building, and the product is never sold into the negatives. The product comes in and goes out according to FIFO and everything looks as you'd expect.

## Inventory Activity Detail

Location is Edmonton and Product Name is POWER - Power Pulse 25 kg between May 01, 2010 and May 31, 2010

### Power Pulse 25 kg (POWER) - bag

Date	Transaction Type	Description	Ref #	In/Out	Balance
May 01, 2010	Opening Balance				0.0
May 02, 2010	Inventory Receipt	Slone's Agricultural Supply	101210-01	10.0	10.0
May 03, 2010	Loadout Ticket	Kleuger, Pete	LOTE246	-3.0	7.0
May 06, 2010	Loadout Ticket	Douglas, Chris	LOTE247	-4.0	3.0
May 09, 2010	Inventory Receipt	Slone's Agricultural Supply	101210-02	5.0	8.0
May 10, 2010	Loadout Ticket	George, Curtis	LOTE248	-6.0	2.0
May 13, 2010	Inventory Adjustment	bag fell off shelf and broke	IA1021	-1.0	1.0
May 13, 2010	Inventory Receipt	Slone's Agricultural Supply	101213-02	5.0	6.0
<b>Totals</b>	Inventory Adjustment			-1.0	
	Inventory Receipt			20.0	
	Loadout Ticket			-13.0	
	<b>Net Change</b>			<b>6.0</b>	

\$101/bag

\$105/bag

\$107.75 /bag

6 bags left

The current value as of May 31 is just what you'd think it would be if you had 1 bag that cost \$105 and 5 bags that cost \$107.75 sitting out in the chemical shed.

## Inventory Current Value

Edmonton Product Name is POWER - Power Pulse 25 kg Showing Product Details as of May 31, 2010

### Power Pulse 25 kg (POWER) bag

Date	Reference	Location	Quantity	Unit Cost	Amount
May 09, 2010	101210-02	Edmonton	1.0000	\$105.0000	\$105.00
May 13, 2010	101213-02	Edmonton	5.0000	\$107.7500	\$538.75
		Product Totals	6.0000	\$107.2917	\$643.75
<b>Grand Total:</b>					<b>\$643.75</b>

Average Cost = \$643.75 / 6 units = \$107.2917/unit

The *Cost History* confirms it.

## Inventory Cost History

Edmonton All Details May 01, 2010

### Power Pulse 25 kg (POWER) - bag

Last Cost	Date	Estimated Cost	Update Last Cost	Remaining	Average Cost
\$107.75	May 13, 2010	\$107.75	<input checked="" type="checkbox"/>	6.00	\$107.2917

Date	Reference	Quantity	Remaining	Base Cost	Adjusted Cost
May 13, 2010	<a href="#">101213-02</a>	5.00	5.00	\$107.75	\$107.75
May 09, 2010	<a href="#">101210-02</a>	5.00	1.00	\$105.00	\$105.00
May 02, 2010	<a href="#">101210-01</a>	10.00	0.00	\$101.00	\$101.00

received 5,  
have 5 left

received 5,  
have 1 left

An important thing to remember is that although agrē draws down from the Inventory Cost History table in **FIFO (First In, First Out)** order, agrē can only see what is in the Cost History table *right now*. **Cost history doesn't automatically reshuffle** after the fact: once a transaction has used up a cost row from cost history, it holds onto it.

**Help:** There's a detailed example in the [Cost History white paper](#) about the effects of entering inventory receipts out of order.

# Inventory Current Value in the Real World

## Incoming Inventory is Entered Out of Order

Sometimes inventory receipts don't get entered right away and sometimes they don't get entered in the right order. Product still gets sold so inventory counts can end up in the negatives. Because agrē allows you to backdate, the **Inventory Activity Detail report** can look just fine.

### Inventory Activity Detail

Location is Edmonton and Product Name is BUMPER - Bumper Barley between May 01, 2010 and May 31, 2010

#### Bumper Barley (BUMPER) - bag

Date	Transaction Type	Description	Ref #	In/Out	Balance
May 01, 2010	Opening Balance				0.0
May 02, 2010	Inventory Receipt	Stone's Agricultural Supply	101213-03	10.0	10.0
May 03, 2010	Loadout Ticket	Kleuger, Pete	LOTE249	-3.0	7.0
May 06, 2010	Loadout Ticket	Douglas, Chris	LOTE250	-4.0	3.0
May 09, 2010	Inventory Receipt	Stone's Agricultural Supply	101213-05	5.0	8.0
May 10, 2010	Loadout Ticket	George, Curtis	LOTE251	-6.0	2.0
May 13, 2010	Inventory Adjustment	bag fell off shelf and broke	IA1022	-1.0	1.0
May 13, 2010	Inventory Receipt	Stone's Agricultural Supply	101213-04	5.0	6.0
<b>Totals</b>	Inventory Adjustment			-1.0	
	Inventory Receipt			20.0	
	Loadout Ticket			-13.0	
	<b>Net Change</b>			<b>6.0</b>	

transactions are always reported in chronological order no matter what date they were entered, so the Inventory Activity for Bumper Barley looks the same as for Power Pulse

However, when transactions are entered out of chronological order, the results of the *Current Value report* can be deceiving.

### Inventory Current Value

Edmonton Product Name is BUMPER - Bumper Barley Showing Product Details as of May 31, 2010

#### Bumper Barley (BUMPER) bag

Date	Reference	Location	Quantity	Unit Cost	Amount
May 09, 2010	101213-05	Edmonton	5.0000	\$105.0000	\$525.00
May 13, 2010	101213-04	Edmonton	1.0000	\$107.7500	\$107.75
		Product Totals	6.0000	\$105.4583	\$632.75

Grand Total: \$632.75

the math is right, but average cost & current value are not correct

Blame the real culprit: inventory levels fell below 0 (sold into the negatives) and inventory receipts were not entered in the right order! As soon as inventory levels fall below 0, agrē can't know the cost of the next unit sold. Since every unit needs a cost, it will grab the first one available to fill up waiting rows in the cost history table

## Inventory Cost History

Edmonton All Details May 01, 2010

### Bumper Barley (BUMPER) - bag

Last Cost	Date	Estimated Cost	Update Last Cost	Remaining	Average Cost
\$107.75	May 13, 2010	\$107.75	<input checked="" type="checkbox"/>	6.00	\$105.4583

Date	Reference	Quantity	Remaining	Base Cost	Adjusted Cost
May 13, 2010	101213-04	5.00	1.00	\$107.75	\$107.75
May 09, 2010	101213-05	5.00	5.00	\$105.00	\$105.00
May 02, 2010	101213-03	10.00	0.00	\$101.00	\$101.00

transactions are sorted in chrono order no matter when they were entered

here's the clue that transactions were not entered in a timely manner: First In does not appear to be First Out!

product from May 13 went out before product from May 9

Because the Inventory Receipt for May 13 was entered first, the units waiting for costs grabbed \$107.75 as their cost. Once waiting cost rows are filled, they won't be replaced automatically by a "better" cost later on even if you backdate.

Entry Order	Posting Date	Action	Quantity	Running Balance
1	2-May	Inv Rec	10.00	10.00
2	3-May	LOT - Kleuger	-3.00	7.00
3	6-May	LOT - Douglas	-4.00	3.00
4	10-May	LOT - George	-6.00	-3.00
5	13-May	Inv Adj - broken bag	-1.00	-4.00
6	13-May	Inv Rec - \$107.75	5.00	1.00
7	9-May	Inv Rec - \$101.00	5.00	6.00

balance < 0 means waiting cost rows

first available cost

entered after #6 and backdated to May 9

## No Units Left in Stock, but Current Value isn't \$0

Now it's time to add a bit of complexity to the above example. Let's end the year (June 30) with a negative inventory level, and let's say the cost of the product dropped after May 31<sup>st</sup>.

### Inventory Activity Detail

Location is Edmonton and Product Name is BUMPER - Bumper Barley between May 01, 2010 and Jun 30, 2010

#### Bumper Barley (BUMPER) - bag

Date	Transaction Type	Description	Ref #	In/Out	Balance
May 01, 2010	Opening Balance				0.0
May 02, 2010	Inventory Receipt	Slone's Agricultural Supply	101213-03	10.0	10.0
May 03, 2010	Loadout Ticket	Kleuger, Pete	LOTE249	-3.0	7.0
May 06, 2010	Loadout Ticket	Douglas, Chris	LOTE250	-4.0	3.0
May 09, 2010	Inventory Receipt	Slone's Agricultural Supply	101213-05	5.0	8.0
May 10, 2010	Loadout Ticket	George, Curtis	LOTE251	-6.0	2.0
May 13, 2010	Inventory Adjustment	bag fell off shelf and broke	IA1022	-1.0	1.0
May 13, 2010	Inventory Receipt	Slone's Agricultural Supply	101213-04	5.0	6.0
Jun 18, 2010	Loadout Ticket	Parkhill, Jason	LOTE252	-4.0	2.0
Jun 26, 2010	Loadout Ticket	Smithers, Lewis	LOTE253	-2.0	0.0
Jun 30, 2010	Loadout Ticket	Thachuk, Mark	LOTE254	-3.0	-3.0
<b>Totals</b>	Inventory Adjustment			-1.0	
	Inventory Receipt			20.0	
	Loadout Ticket			-22.0	
	<b>Net Change</b>			<b>-3.0</b>	

You need to be very careful about entering the next "incoming inventory" transaction because agrē will use that cost to fill up the waiting cost rows – even if it's the wrong cost!

If you run the *Inventory Balances report* on the date of your fiscal yearend and you notice that you have negative inventory levels, if you fix it right away you'll have a much better chance of ending up with the right costs, (and thus the right current values), than if you wait several months and then try to track down what happened. Because you know that you can't *really* hand over 3 bags of seed you don't have, you'll realize right away that you've forgotten to enter an inventory receipt, a location transfer, or a customer return and you can quickly enter it before another incoming transaction skews your costs.

### Inventory Balances

Edmonton

Product Name is BUMPER - Bumper Barley as of Jun 30, 2010

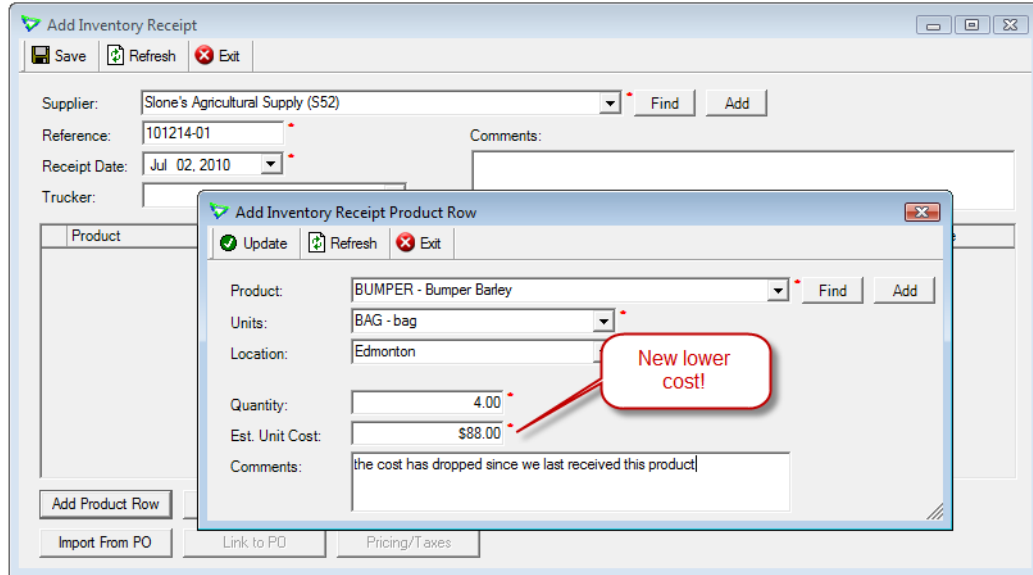
Product Type: Chemical

as of fiscal year end,  
balance < 0

Product	Units	Shelf	Minimum Level	Qty On Hand
Bumper Barley (BUMPER)	bag			-3.0000*

## The Effect of Ignoring Negative Balances

If you ignore the negative inventory balance and continue with business as usual, the next “incoming inventory” transaction entered will provide those units with a value to fill the waiting cost rows. That *could* be fine - unless the cost is different.



Even though the product was received in the new fiscal year (July), because there were units waiting for costs in the old fiscal year, it's this new year cost that will be used to assess their value.

The **Cost History** looks right: there were -3 units, 4 came in, and the last one left is valued at \$88. However, when you compare it to the **Current Value** as of the old yearend, you see that remaining inventory at year end was *not* valued the higher cost. The cost didn't drop until the new fiscal year, so everything from the old year should have been valued at a higher cost than what it was.

### Inventory Cost History

Edmonton All Details Jan 01, 2007

Bumper Barley (BUMPER) - bag						
Last Cost	Date	Estimated Cost	Update Last Cost	Remaining	Average Cost	
\$88.00	Jul 02, 2010	\$88.00	<input checked="" type="checkbox"/>	1.00	\$88.00	

Date	Reference	Quantity	Remaining	Base Cost	Adjusted Cost
Jul 02, 2010	101214-01	4.00	1.00	\$88.00	\$88.00
May 13, 2010	101213-04	5.00	0.00	\$107.75	\$107.75
May 09, 2010	101213-05	5.00	0.00	\$105.00	\$105.00
May 02, 2010	101213-03	10.00	0.00	\$101.00	\$101.00

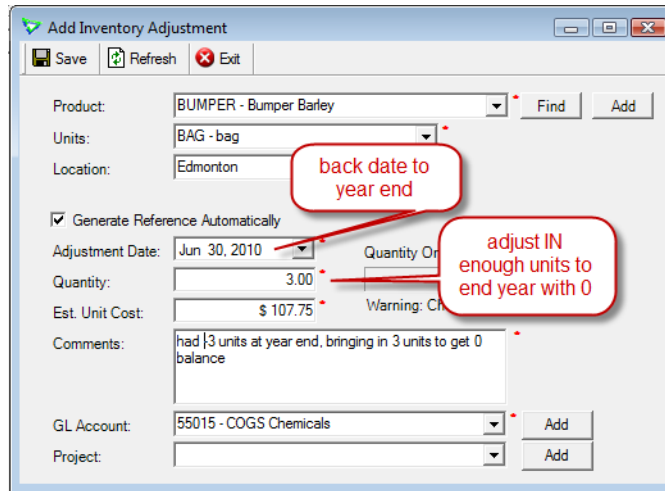
### Inventory Current Value

Edmonton Product Name is BUMPER - Bumper Barley Showing Product Details as of Jun 30, 2010

Date	Reference	Location	Quantity	Unit Cost	Amount
Jun 30, 2010	LOTE254	Edmonton	-3.0000	\$88.0000	-\$264.00
Product Totals			-3.0000	\$88.0000	-\$264.00
Grand Total:					-\$264.00

The \$88 is the cost that would be posted to COGS for those 3 units, when it should have been \$107.75. This results in an incorrect margin and overstated profits for the old fiscal year. In order to try and correct

this, often a backdated inventory receipt or inventory adjustment is made to try to bring in 3 units at year end at the right cost.



Here's why that won't work – Bumper was sold into the negatives, so it grabbed the first available cost. That cost was \$88. It doesn't matter that you now have a better cost – cost history doesn't reshuffle (unless you tell it to with the *Cost Reallocation* tool). Those units already have a cost and they aren't looking to upgrade.

## Inventory Current Value

Edmonton Product Name is BUMPER - Bumper Barley Showing Product Details as of Jun 30, 2010

### Bumper Barley (BUMPER) bag

Date	Reference	Location	Quantity	Unit Cost	Amount
Jun 30, 2010	LOTE254	Edmonton	-3.0000	\$88.0000	-\$264.00
Jun 30, 2010	IA1023	Edmonton	3.0000	\$107.7500	\$323.25
Product Totals			0.0000		\$59.25
<b>Grand Total:</b>					<b>\$59.25</b>

... but shouldn't any dollar value multiplied by 0 units still equal \$0? Yes, but that's not what this report is saying.

agrē is telling you that on that day the *net quantity* was 0 units, but that was made up of -3 units @ \$88 and +3 units @ \$107.75. The *net dollar value* doesn't equal \$0.

### How do I fix it?

Start with a manual *Cost Reallocation*. If that doesn't produce the results you're looking for it's time to talk to your accountant and ask how they would like you to proceed. The only way to fix it may be to delete every incoming transaction from June 30th on (if that's possible e.g. some transactions in closed periods/years cannot be deleted or even edited) and then re-enter them all in the proper order. Depending on when you noticed the error and the number of transactions involved, this may not be feasible or even desirable. Your accountant will give you the best advice.



## Negative Inventory and Unexpected Average Cost

This happens most often when there is a positive inventory balance at one location, and a negative inventory balance at another, but it can also happen for a single location if you are sold into the negatives.

You purchased:

- 5 bags @ \$95 in Edmonton
- 5 bags @ \$105 in Calgary (it costs more to ship to Calgary than to Edmonton)

### Supplier Purchases

Product Name is CATBEAN - Jacob's Cattle Beans 25kg, No Non-Inv. Purch, Any Location Jan 01, 2011 to Jan 10, 2011

#### Brett-Young Seeds (S016)

PI Ref No	Date	Line Item	Quantity	Location	Unit Cost	Line Total	Line Description
110110-01	Jan 10, 2011	Jacob's Cattle Beans 25kg (CATBEAN) bag	5	Edmonton	\$95.00	\$475.00	
110110-01	Jan 10, 2011	Jacob's Cattle Beans 25kg (CATBEAN) bag	5	Calgary	\$105.00	\$525.00	
Total Jacob's Cattle Beans 25kg (CATBEAN) bag			10			\$1,000.00	
Total Brett-Young Seeds (S016)						\$1,000.00	
Grand Total						\$1,000.00	

Out of the 10 bags you received, you sold 3 bags in Calgary, 6 bags in Edmonton.

### Inventory Activity Detail

All Locations Selected and Product Name is CATBEAN - Jacob's Cattle Beans 25kg between Jan 01, 2011 and Jan 10, 2011

#### Jacob's Cattle Beans 25kg (CATBEAN) - bag

Date	Transaction Type	Description	Ref #	Location	In/Out	Balance
Jan 01, 2011	Opening Balance					0.0
Jan 10, 2011	Inventory Receipt	Brett-Young Seeds	110110-01	Edmonton	5.0	5.0
Jan 10, 2011	Inventory Receipt	Brett-Young Seeds	110110-01	Calgary	5.0	10.0
Jan 10, 2011	AR Invoice	Baker, Mike	INVE271	Edmonton	-3.0	7.0
Jan 10, 2011	AR Invoice	Abraham, James	INVC041	Calgary	-3.0	4.0
Jan 10, 2011	AR Invoice	Slone, Leslie	INVE272	Edmonton	-3.0	1.0
<b>Totals</b>	AR Invoice				-9.0	
	Inventory Receipt				10.0	
	<b>Net Change</b>				1.0	

You have 1 bag left in total.

## Inventory Balances Company

Product Name is CATBEAN - Jacob's Cattle Beans 25kg as of Jan 10, 2011

Product Type: Seed

Product	Units	Qty On Hand
Jacob's Cattle Beans 25kg (CATBEAN)	bag	1.0000

overall  
company  
balance is  
positive

The **Current Value report** agrees that you have 1 bag left in inventory, but reports its value is \$110. How did that happen? You paid at most only \$105/unit, not \$110.

## Inventory Current Value

Consolidated Product Name is CATBEAN - Jacob's Cattle Beans 25kg Showing Product Details  
as of Jan 10, 2011

Jacob's Cattle Beans 25kg (CATBEAN) bag

Date	Reference	Location	Quantity	Unit Cost	Amount
Jan 10, 2011	INVE272	Edmonton	-1.0000	\$100.0000	-\$100.00
Jan 10, 2011	110110-01	Calgary	2.0000	\$105.0000	\$210.00
Product Totals			1.0000	\$110.0000	\$110.00
Grand Total:					\$110.00

total # of units  
left in stock

average  
unit cost

**The trick is to read the report carefully.** The **Current Value report** isn't telling you that you have 1 bag left worth \$110; it's telling you that what you really have is:

- -1 bag @ \$100 in Edmonton = -\$100
- +2 bags @ \$105 in Calgary = \$+210

When agrē does the math:

$$\begin{array}{r}
 \phantom{+} \quad \quad \quad \mathbf{\$-100} \\
 + \quad \quad \quad \mathbf{\$+210} \\
 \hline
 = \quad \quad \quad \mathbf{\$+110}
 \end{array}$$

Sometimes when a location is sold into the negatives, the unit cost, while mathematically correct, isn't going to be the value you expect.

### How do I fix it?

You need to correct the negative inventory in Edmonton! Both you and agrē know that **you can't sell product you don't have**, so an extra unit must have arrived in Edmonton from *somewhere*.

If that unit was brought in from Calgary, a *location transfer* from Calgary to Edmonton would zero out Edmonton's inventory, leaving the one unit in Calgary with the right unit cost.

### Inventory Current Value

Consolidated Product Name is CATBEAN - Jacob's Cattle Beans 25kg Showing Product Details  
as of Jan 11, 2011

Jacob's Cattle Beans 25kg (CATBEAN) bag

Date	Reference	Location	Quantity	Unit Cost	Amount
Jan 10, 2011	110110-01	Calgary	1.0000	\$105.0000	\$105.00
		Product Totals	1.0000	\$105.0000	\$105.00
<b>Grand Total:</b>					<b>\$105.00</b>

If one new unit was actually received in Edmonton, or an inventory adjustment was made to bring in one unit, Edmonton would no longer have a negative balance and the *Current Value report* would show the right cost on the remaining units in Calgary.