Quick Answer:

Variances are posted as journal entries.

1. Pull up a Production Order with a variance (if you can't find one in live, create one in your test database)
2. Close the PdO itself (change status from "Released" to "Closed", verify the information and the date that it is being posted to and click "Update")
3. Open the PdO back up and click on the history tab
   1. There you will see both "Issue" and "Receipt" line items.
   2. The gold arrow next to the Document Number can be used to drill in to the JE created and you'll see which GLs the variances post to.

Detailed Answer:

Note:

1. "Issue" refers to removing inventory, "Receipt" refers to bringing inventory in stock.

2. WIP items use "WIP" and "Semi Finished Goods" accounts to confirm when they are being issued and receipted, respectively.

3. "Wort" is the first step in the beer process. To create Wort, we issue out raw materials and receipt the "wort" item itself.

Production Order (PdO) 10152 is our "control" PdO where no variances are found. We processed this for 30 barrels and consumed exactly what was planned for:

Production Order

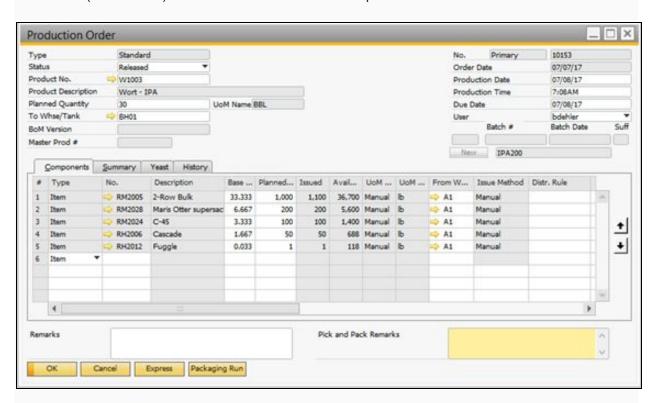|								
Type	Standard				No.	Primary	10152	
Status	Released ▼				Order Date		07/07/17	
Product No.	⇨ W1003				Production Date		07/07/17	
Product Description	Wort - IPA				Production Time		7:07AM	
Planned Quantity	30		UoM Name BBL		Due Date		07/07/17	
To Whse/Tank	⇨ BH01				User		bdehler ▼	
BoM Version						Batch #	Batch Date	Suff
Master Prod #								
					New	IPA100		

Components | Summary | Yeast | History

#	Type	No.	Description	Base ...	Planned...	Issued	Avail...	UoM ...	UoM ...	From W...	Issue Method	Distr. Rule
1	Item	⇨ RM2005	2-Row Bulk	33.333	1,000	1,000	36,700	Manual	lb	⇨ A1	Manual	
2	Item	⇨ RM2028	Maris Otter supersac	6.667	200	200	5,600	Manual	lb	⇨ A1	Manual	
3	Item	⇨ RM2024	C-45	3.333	100	100	1,400	Manual	lb	⇨ A1	Manual	
4	Item	⇨ RH2006	Cascade	1.667	50	50	688	Manual	lb	⇨ A1	Manual	
5	Item	⇨ RH2012	Fuggle	0.033	1	1	118	Manual	lb	⇨ A1	Manual	
6	Item ▼											

Remarks | Pick and Pack Remarks

OK | Cancel | Express | Packaging Run

The "Summary" tab confirms the component and product (actual vs planned) costs are identical:

Production Order

Type	Standard				No.	Primary	10152	
Status	Released ▼				Order Date		07/07/17	
Product No.	⇨ W1003				Production Date		07/07/17	
Product Description	Wort - IPA				Production Time		7:07AM	
Planned Quantity	30		UoM Name BBL		Due Date		07/07/17	
To Whse/Tank	⇨ BH01				User		bdehler ▼	
BoM Version						Batch #	Batch Date	Suff
Master Prod #								
						IPA100		

Components | **Summary** | Yeast | History

Costs

		Quantities		**Planned Times**	
Actual Item Component Cost	⇨ $ 1,211.57	Planned Quantity	30	Total Run Time	0:00:00
Actual Resource Component Cost		Completed Quantity	30	Total Additional Time	0:00:00
Actual Additional Cost		Rejected Quantity		Total Time	0:00:00
Actual Product Cost	⇨ $ 1,211.57				
Actual By-Product Cost		**Dates**			
Total Variance		Due Date	07/07/17		
		Actual Closing Date			
Journal Remark	Production Order - W1003	Overdue			

Remarks | Pick and Pack Remarks
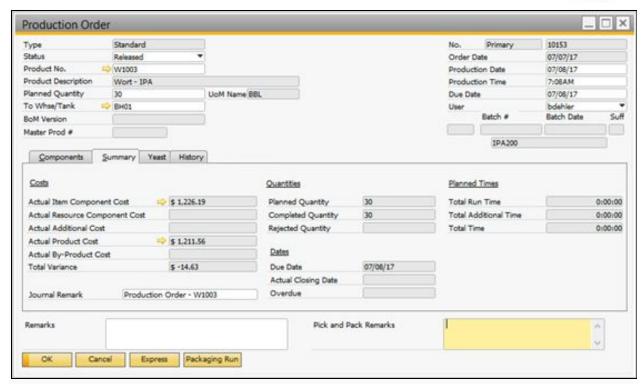
OK | Cancel | Express | Packaging Run

<u>Note:</u> We will get in to the GL transactions in the next example below, but on the above example, $1211.57 worth of raw materials converted in to $1211.57 worth of wort so there was no variance and the WIP account would wash out with the same value.

PdO 10153 was produced with all things being equal except for an additional 100 pounds of 2-Row Bulk malt being consumed. The "Components" tab confirms that 1100 lbs were consumed (6th column) rather than the 1000 that was planned:
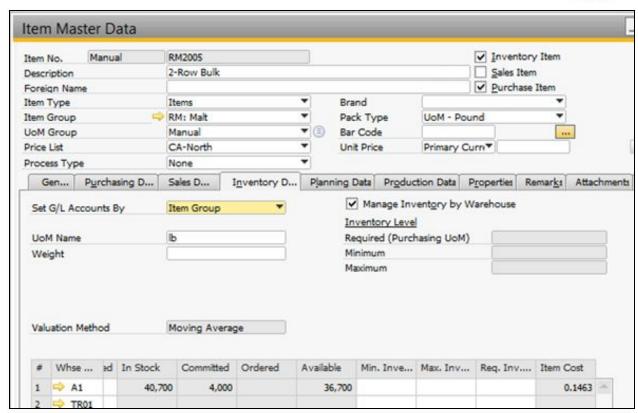

The "Summary" tab quickly shows us the item cost (actual) versus product cost (planned). It also confirms a total variance (if there is one) below these on the bottom left side of the "Costs" section. Also worth pointing out, the "Quantities" section confirms that we planned for 30 barrels and produced 30 barrels. In our example, the extra 100 lbs of malt are listed as a variance of $14.63:

Production Order

Type	Standard		No.	Primary	10153
Status	Released		Order Date		07/07/17
Product No.	W1003		Production Date		07/08/17
Product Description	Wort - IPA		Production Time		7:08AM
Planned Quantity	30	UoM Name BBL	Due Date		07/08/17
To Whse/Tank	BH01		User		bdehler
BoM Version				Batch #	Batch Date	Suff
Master Prod #					IPA200

Components Summary Yeast History

Costs

Actual Item Component Cost	$ 1,226.19
Actual Resource Component Cost	
Actual Additional Cost	
Actual Product Cost	$ 1,211.56
Actual By-Product Cost	
Total Variance	$ -14.63
Journal Remark	Production Order - W1003

Quantities

Planned Quantity	30
Completed Quantity	30
Rejected Quantity	

Dates

Due Date	07/08/17
Actual Closing Date	
Overdue	

Planned Times

Total Run Time	0:00:00
Total Additional Time	0:00:00
Total Time	0:00:00

Remarks

Pick and Pack Remarks

OK Cancel Express Packaging Run

The $14.63 difference comes directly from the 100 additional units consumed, and is calculated as the average current cost of the item (RM2005) in stock. The bottom right corner of this screenshot confirms where the moving average cost is listed for this item:
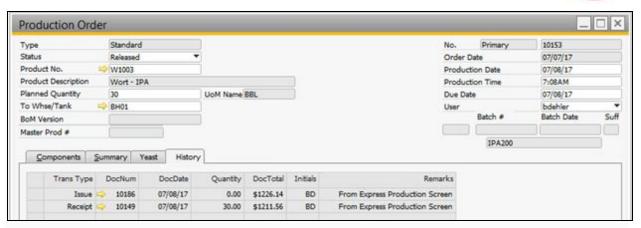
Item Master Data

Item No.	Manual	RM2005		☑ Inventory Item
Description		2-Row Bulk		☐ Sales Item
Foreign Name				☑ Purchase Item

Item Type	Items		Brand		
Item Group	➾ RM: Malt		Pack Type	UoM - Pound	
UoM Group	Manual		Bar Code		...
Price List	CA-North		Unit Price	Primary Curn	
Process Type	None				

Gen... | Purchasing D... | Sales D... | Inventory D... | Planning Data | Production Data | Properties | Remarks | Attachments

Set G/L Accounts By	Item Group		☑ Manage Inventory by Warehouse
			Inventory Level
UoM Name	lb		Required (Purchasing UoM)
Weight			Minimum
			Maximum

Valuation Method	Moving Average

#	Whse ...	ed	In Stock	Committed	Ordered	Available	Min. Inve...	Max. Inv...	Req. Inv....	Item Cost
1	➾ A1		40,700	4,000		36,700				0.1463
2	➾ TR01									

To show all of this in a spreadsheet format, we can see where the issue vs planned matches on all items except the 2-Row Bulk malt along with the difference in actual vs planned cost:
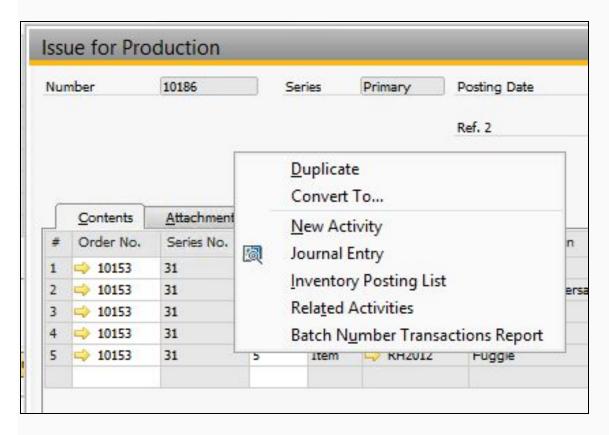
No.	Description	Unit Cost	Planned Qty	Planned Cost	Issued Qty	Issued Cost	Difference
RM2005	2-Row Bulk	0.1463	1,000	146.3	1,100	160.93	14.63
RM2028	Maris Otter supersack	0.6072	200	121.44	200	121.44	0
RM2024	C-45	0.7773	100	77.73	100	77.73	0
RH2006	Cascade	17	50	850	50	850	0
RH2012	Fuggle	16.045	1	16.045	1	16.045	0
				1211.515		1226.145	14.63

This confirms how/why the cost variance appears. Let's take a look at what that means from the GL perspective. On the "History" tab of PdO 10153 you can see the Issue and Receipt transactions that were automatically created when this PdO was processed:
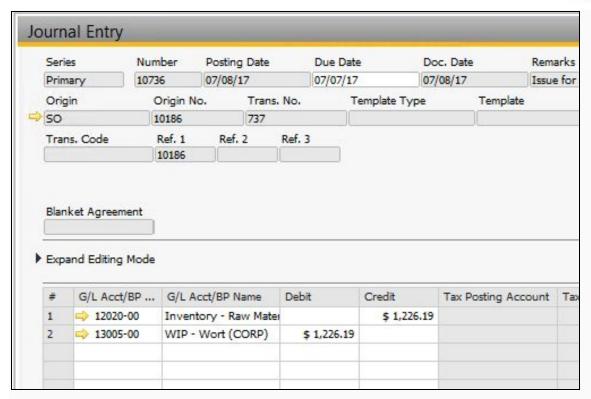
Production Order

Type	Standard				No.	Primary	10153
Status	Released				Order Date		07/07/17
Product No.	W1003				Production Date		07/08/17
Product Description	Wort - IPA				Production Time		7:08AM
Planned Quantity	30		UoM Name	BBL	Due Date		07/08/17
To Whse/Tank	BH01				User		bdehler
BoM Version						Batch #	Batch Date	Suff
Master Prod #							IPA200	

Components | **Summary** | **Yeast** | **History**

Trans Type	DocNum	DocDate	Quantity	DocTotal	Initials	Remarks
Issue	10186	07/08/17	0.00	$1226.14	BD	From Express Production Screen
Receipt	10149	07/08/17	30.00	$1211.56	BD	From Express Production Screen

By drilling in to each (clicking the gold arrow next to "10186" and "10149" we're able to see the documents that were created, as well as right click and select the "Journal Entry" that was created for each of those documents:
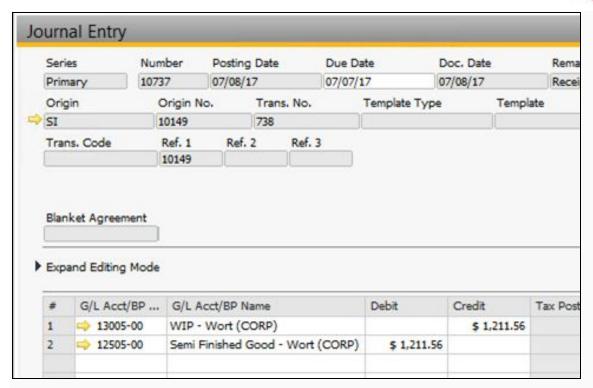

Issue for Production

Number	10186	Series	Primary	Posting Date

Ref. 2

Duplicate
Convert To...
New Activity
Journal Entry
Inventory Posting List
Related Activities
Batch Number Transactions Report

Contents | **Attachment**

#	Order No.	Series No.				n
1	10153	31				
2	10153	31				ersa
3	10153	31				
4	10153	31				
5	10153	31	5	Item	RH2012	Fuggle

Journal Entry

Series	Number	Posting Date	Due Date	Doc. Date	Remarks
Primary	10736	07/08/17	07/07/17	07/08/17	Issue for

Origin	Origin No.	Trans. No.	Template Type	Template
SO	10186	737		

Trans. Code	Ref. 1	Ref. 2	Ref. 3
	10186		

Blanket Agreement

▶ Expand Editing Mode

#	G/L Acct/BP ...	G/L Acct/BP Name	Debit	Credit	Tax Posting Account	Tax
1	⇨ 12020-00	Inventory - Raw Mater		$ 1,226.19		
2	⇨ 13005-00	WIP - Wort (CORP)	$ 1,226.19			

When we issued out the raw materials, we credited the Inventory - Raw Materials account for $1226.19 (the actual cost of the raw materials including the additional 100 lbs of malt) and we offset this to a WIP - Wort GL.

When we receipted the Wort, this WIP - Wort account is credited, and a Semi Finished Good - Wort account is debited:

Journal Entry

Series	Number	Posting Date	Due Date	Doc. Date	Rema
Primary	10737	07/08/17	07/07/17	07/08/17	Recei

Origin	Origin No.	Trans. No.	Template Type	Template
SI	10149	738		

Trans. Code	Ref. 1	Ref. 2	Ref. 3
	10149		

Blanket Agreement

▶ Expand Editing Mode

#	G/L Acct/BP ...	G/L Acct/BP Name	Debit	Credit	Tax Post
1	13005-00	WIP - Wort (CORP)		$ 1,211.56	
2	12505-00	Semi Finished Good - Wort (CORP)	$ 1,211.56		

Because we spent additional funds (from malt) to create this wort and did not receive more wort than planned, the system sees this variance of $14.63. It cost us 10% more in malt to produce 0% more in wort, so there is a discrepancy/variance there.

Importance of Closing PdOs

Since $1226.19 was debited and only $1211.56 was credited, the $14.63 will remain in the WIP - Wort account until the PdO is Closed (literally changed from "Released" to "Closed" status). When a PdO is closed, the variances will then be posted as the JE below shows:

Journal Entry

Series	Number	Posting Date	Due Date	Doc. Date	Remarks
Primary	10746	07/07/17	07/07/17	07/07/17	Production Order - W1003

Origin	Origin No.	Trans. No.	Template Type	Template	Indicator
PW	10157	747			

Trans. Code	Ref. 1	Ref. 2	Ref. 3
	10153		

Blanket Agreement

▶ Expand Editing Mode

#	G/L Acct/BP Code	G/L Acct/BP Name	Debit	Credit	Tax Posting Account	Tax Co
1	13005-00	WIP - Wort (CORP)		$ 14.63		
2	52005-01	WIP Variance - Wort (BREW)	$ 14.63			
3	52005-01	WIP Variance - Wort (BREW)		$ 14.63		
4	12505-00	Semi Finished Good - Wort (CORP)	$ 14.63			

The PdO will now reflect the total cost of production:

Production Order

Type	Standard
Status	Closed
Product No. ⇨	W1003
Product Description	Wort - IPA
Planned Quantity	30	UoM Name BBL
To Whse/Tank ⇨	BH01
BoM Version	
Master Prod #	

Components | **Summary** | **Yeast** | **History**

Costs | Qu

Actual Item Component Cost ⇨	$ 1,226.19	Pl
Actual Resource Component Cost		C
Actual Additional Cost		Re
Actual Product Cost ⇨	$ 1,226.19	
Actual By-Product Cost		Da
Total Variance		D
		A

Over time we will need to monitor the WIP and Semi Finished Good GLs to ensure two things:

1. No abnormally large transactions post to it. The definition of "abnormal" differs between clients and their allowable thresholds. If a $50,000 discrepancy posts on one transaction, this is a RED FLAG that someone is processing production incorrectly (e.g. planning to produce 1 unit but receiving 100 instead). *All mistakes like this can be corrected but it is important to find/fix these ASAP to ensure bad/incorrect habits aren't formed.* It is much easier to fix this on one or two PdOs at the beginning rather than the same issue accumulating over months and multiple PdOs/JEs needing to be corrected.

2. The variances are indicators that either the BOM is incorrectly populated or there is an issue with production spillage or over/under consumption of some sort. For example, if 1100 lbs is used from now on, we need to increase the BOM to 1100 lbs rather than posting $14.63 variances over and over to this account. If it should only be 1000 lbs, we need to take action to determine why 1100 keeps being consumed on subsequent PdOs.

As a side note: the variance itself is showing a discrepancy between what we should have consumed/received and what we actually received. Had we instead received a 10% increase in wort AND all issued components consumed an additional 10%, then there would be no variance once again:

Production Order

Type	Standard	
Status	Released	
Product No.	W1003	
Product Description	Wort - IPA	
Planned Quantity	30	UoM Name BBL
To Whse/Tank	BH01	
BoM Version		
Master Prod #		

No.	Primary	10155
Order Date		07/07/17
Production Date		07/09/17
Production Time		7:09AM
Due Date		07/09/17
User		bdehler

Batch #	Batch Date	Suff

New   IPA301

Components | Summary | Yeast | History

#	Type	No.	Description	Base ...	Planned...	Issued	Avail...	UoM ...	UoM ...	From W...	Issue Method	Distr. Rule
1	Item	RM2005	2-Row Bulk	33.333	1,000	1,100	34,500	Manual	lb	A1	Manual	
2	Item	RM2028	Maris Otter supersac	6.667	200	220	5,180	Manual	lb	A1	Manual	
3	Item	RM2024	C-45	3.333	100	110	1,190	Manual	lb	A1	Manual	
4	Item	RH2006	Cascade	1.667	50	55	583	Manual	lb	A1	Manual	
5	Item	RH2012	Fuggle	0.033	1	1.1	115.9	Manual	lb	A1	Manual	
6	Item											

Production Order

Type	Standard
Status	Released
Product No.	W1003
Product Description	Wort - IPA
Planned Quantity	30 UoM Name BBL
To Whse/Tank	BH01
BoM Version	
Master Prod #	

Components | Summary | Yeast | History

Costs

Actual Item Component Cost	$ 1,332.71
Actual Resource Component Cost	
Actual Additional Cost	
Actual Product Cost	$ 1,332.71
Actual By-Product Cost	
Total Variance	

Quantities

Planned Quantity	30
Completed Quantity	33
Rejected Quantity	

Dates

Due Date	07/09/17
Actual Closing Date	

The 10% increase in issued components and the 10% increase in receipted material (33 BBLs) equates to no variance. Cost us 10% more to produce 10% more, so no difference.

It cannot be over exaggerated when stated that EVERYTHING stems from the Bill of Materials and the PdOs created from them. If the BOMs are inaccurate and production processes actual/different numbers, the system will keep reporting variances. A certain amount of variances are to be expected/acceptable in Orchestrated, but we must be diligent in the creation/updating of BOMs to ensure these variances are minimized.

I know that's a lot to digest so feel free to read over that a few times and practice, practice, practice in your test database!