

Company

Understanding Step Rate Charges

Business Problem:

Provide ability to vary a Charge Rate based on a “Cutoff” value that is dynamically calculated whenever the Charge is refreshed. A Formula is used to calculate the cutoff value.

Example

Step Rate charges are frequently used by Onion Packer/Shippers to calculate packing charges. Their issue is that if the onions being packed have quality problems, then there is more manual labor required to clean them up for packing, which results in higher costs to the Packer/Shipper. They would like to somehow quantify the quality problems and charge the Grower more when the quality is below standard, and charge the Grower less when the quality is good.

This example is for packing charges, so it is some property of the Packout Run that determines the cutoff value. Some Packer/Shippers may subjectively decide what this factor is and simply enter a number into a Run field: “Run Rate” is commonly used for this. Other Packer Shippers will have Envio calculate this on the fly, using a formula choosing variables that are properties of the Run.

Suppose you want to vary a charge based on the number of 50# bag equivalents packed out per bins dumped into a Run. (The more 50# bags you get out of a bin, the better the quality of onions.) Packing charges should also vary by pack, since each pack requires more or less labor to pack.

Based on historical business analysis, I determine that a bin usually yields anywhere between 8 and 15, 50# bags/bins. In the example below, note how the packing charge is higher when there are fewer 50# bags/bin, and is lower when the 50# bags/bin is higher. Thus the grower gets penalized with a higher packing charge when the 50# bags/bin is low, but gets rewarded with a lower packing charge when the 50# bags/bin is high.

Step Charge Chart

	8	9	10	11	12	13	14	15
50# bags	9	8.12	7.4	6.88	6.12	5.23	4.44	3.45
25# bags	6.77	6.33	5.88	5.32	4.55	3.56	2.87	2.35
40# ctn	and	so	on	...				
5/10#								
4/10#								
40# RPC								

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Envio uses a formula to calculate the bags/bin number when the product is created. The values at the top of the table are the “Cutoffs”. Envio takes its calculated value (bags/bin in this case) and starts from the left of the table. Going from left to right, **Envio looks for the first cutoff value that is *greater* than its calculated value.**

Examples: Envio calculates a bags/bin value of 12.3. The step rate charge allocated to the 50# bags would be \$5.23 because Envio looks for the first cutoff value greater than the calculated number, in this case 13.

Note that the part of this charge that varies by the Pack can be addressed by Envio’s Charge Configuration screen.

There are other uses for step rates, for example when calculating storage charges based on receive date or to determine pack charges based on percentages of weight packed.

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