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Grape Yield Estimation is the process of projecting the yield of a grape crop that will be harvested. Why make this estimation? Growers often would like to know the approximate yield and whether their vines are over cropped in order to determine if cluster thinning is needed. Wineries would like to know how much fermentation tank space is needed for the upcoming crop.

Grape Yield Estimation Formula: $PY = (V \times C \times CW)/2000$

PY = predicted yield (tons acre/block/unit) C = clusters per vine
V = bearing vines per (acre/block/unit) CW = Average cluster weight (in pounds)

V = Bearing Vines per acre is based on vine and row spacing. Non-bearing vines must be subtracted from the total vines per acre to determine the number of bearing vines. Example:

Row Width	Vine Spacing	Vines/Acre	Row Width	Vine Spacing	Vines/acre
12 ft.	8 ft.	454	9 ft.	8 ft.	605
12	7	518	9	7	691
12	6	605	9	6	806
11	8	495	8	8	680
11	7	566	8	7	777
11	6	660	8	6	907
10	8	544	7	8	777
10	7	622	7	7	889
10	6	726	7	6	1037

C = Clusters per vine is determined by pruning severity (nodes per vine) and bud fruitfulness (clusters per shoot). Cluster counts can be made any time after developing clusters are visible. This count is less time consuming if counted before bloom. Counting all the clusters on 10-15 vines in small and uniform vineyards is sufficient. All the clusters on each sample vine should be counted. Vines should be selected in a methodical fashion, example... select every 10th vine in every other row.

CW = Cluster weight will vary the most. At harvest, the best data will come from sampling all the clusters from 10-15 selected vines instead of the bin to get the average yield per vine and average cluster weight. Another option would be to harvest at least 100 clusters throughout the vineyard. Make sure to methodically sample clusters from different areas of each vine, ie...center, middle of cordon, end of cordon. Prior to harvest, you can use the following cluster weights from the following table if you do not have records. It is best to maintain records of cluster weights from year- to- year in order to improve your estimation.

Lag Phase Method: The lag phase of berry development corresponds to the slow period of berry development approximately 50-55 days after first bloom or 1,000- 1,300 season heat units (base 50°F) for many of our varieties. The berries have attained about 50% of their final weight at the lag phase. A multiplier of 2 can be used to predict the cluster weight at harvest. Keeping long term records of average cluster weights at the lag phase and at harvest will give you a more accurate multiplier to use in the future. A sample of 100 – 200 clusters is recommended during this time of the season.

Approximate Average Cluster Weights

Varieties	Small < 0.29	Cultivar	Medium (0.3 – 0.39)	Cultivar	Large > 0.4
Brianna	0.25 lbs.	Bluebell	0.35 lbs.	Cayuga White	0.60 lbs.
GR-7	0.25	Catawba	0.35	Chambourcin	0.80
Kay Gray	0.15	Chancellor	0.35	Espirit	0.50
LaCrosse	0.22	Chardonel	0.40	Jupiter	0.55
Leon Millot	0.15	Coret noir	0.30	Mars	0.40
Louise Swenson	0.25	DeChaunac	0.25	Niagara	0.40
Marechal Foch	0.20	Delaware	0.30	Prairie Star	0.40
Marquette	0.22	Edelweiss	0.35	Reliance	0.40
Norton	0.25	Frontenac	0.30	Seyval Blanc	0.80
Noiret (NY 73)	0.25	Frontenac Gris	0.30	Steuben	0.50
Petite Amie	0.20	LaCrescent	0.30	Traminette	0.40
Petite Pearl	0.20	St Croix	0.35	Vidal Blanc	0.45
St Pepin	0.15	Swenson Red	0.30		
Valvin Muscat	0.20	Valiant	0.30		
Vanessa	0.20				
Vignoles	0.25				

Ave. Cluster wts. Can vary greatly depending on site, management & seasonal weather factors.

Vineyard Block ID: _____

Variety: _____

Vine # # of clusters / Lbs. # of clusters / Lbs. # of clusters / Lbs. _____

1 _____

2 _____

3 _____

4 _____

5 _____

6 _____

7 _____

8 _____

9 _____

10 _____

Total Clusters _____

Total Weight lbs. _____

Ave. Clusters/vine _____

Bearing Vines X _____

Ave. Cluster Wt. Lbs. X _____

Tons = lbs./Unit /2000 _____