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Title: **"Viticulture performance of five Merlot clones in Oakville, Napa Valley"**

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• The authors evaluate the viticultural characteristics of 5 Merlot clones available from Foundation Plant Services (FPS): FPS1, FPS3, FPS6, FPS8 and FPS9. Their trial design is a randomized complete block, with 8 replicates, and 27 vines in each replicate. The experiment runs for five years (1997-2001) in Oakville, California, on a gravelly Bale clay loam. The vines were 5C-grafted, 1.8m x 2.4m-spaced, bilateral cordon, VSP-trained, and spur-pruned. All clones were trained to the same number of shoots, either through pruning or later through shoot-thinning.

• **Yield components.** Yield was lowest by 35% for FPS8 (5.6kg/vine). FPS9 was the second lowest (7.8 kg/vine), and the remaining clones had anywhere from 8.1-8.6 kg/vine. The season-to-season variations in yield were very important, with FPS9 showing the most erratic pattern. Clusters per shoot -and clusters per vine, since all clones were pruned to the same number of shoots- were about the same for all clones. Cluster weight showed important differences among clones, with FPS8 having the lightest clusters; FPS 1, 3, and 6 the heaviest. Cluster weight differences were due mainly to variations in the number of berries per cluster.

• **Fruit composition.** Brix and TA did not differ significantly among clones –the most difference observed in Brix was 0.5 degrees. FPS8 had higher juice pH and juice K. There were high season-to-season variations in fruit composition, mainly due to differences in timing of harvest.

• **Vegetative growth.** FPS8 had the highest pruning weights. FPS1 and 9 had the lowest. The same also applies for shoot weights (since shoot number was regulated, pruning weight is a direct reflection of dry shoot weight). As for the balance between crop and growth, FPS8 had the lowest yield-to-pruning weight ratio (3.1), whereas all remaining clones had yield-to-pruning weight ratios between 5 and 6. (Smart suggests ideal ratios between 5 and 10).

• As the authors discuss, these results are in agreement with two previous California studies on the same topic (by Bettiga, in 2003, in the Central Coast; and by Roberts and Blazer, 1995, in Napa Valley). These authors also single out FPS8 as having the lowest yield, the fewest and smallest berries, and the highest pruning weights.

So if we are going to replant, what is the best clone? First, we need to define what is it that we want from a particular clone. We probably want consistent yields, so FPS9 in this study is "out", so to speak. What else do we want? We want small berries, so FPS1, 3 and 6 are also out. What do we *not* want? We do not want excessive pruning weights, high juice pH, and high juice K. That means we might not want FPS8 either. (Oh no, I think we've just thrown them all out!).

In summary, choosing a clone might really be a matter of what characteristics we favor. We also need to keep in mind that clones that perform poorly under certain conditions could do better under different practices (for instance, a different shoot number that would bring each clone above to a better balance). Under the conditions of this study, clones **FPS1, FPS3 and FPS6 outperformed the rest**.

	Origin	Berry weight (g)	Yield (kg/vine)	Brix	Yield/Pruning weight
FPS 1	California (Inglenook)	1.5 a	8.1 ab	24.7	5.7 a
FPS 3	California (Inglenook)	1.5 a	8.4 a	24.9	5.4 ab
FPS 6	California (Monte Rosso)	1.5 a	8.6 a	24.9	5.3 b
FPS 8	Argentina	1.4 b	5.6 c	24.8	3.1 c
FPS 9	Italy (Rauscedo 3)	1.4 b	7.8 b	25.1	5.2 b

Only a few parameters measured by the authors presented here.
Values which share a letter are practically the same (with a probability of that not being true of 5 out of 100, or $p<0.05$)

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