



## Target Values - Petioles

Nutrient	Bloom	Veraison
Nitrogen (N, %)	1.2 - 2.2	0.8 - 1.2
Phosphorus (P, %)	0.17 - 0.30	0.14 - 0.30
Potassium (K, %)	1.5 - 2.5	1.2 - 2.0
Magnesium (Mg, %)	0.3 - 0.5	0.35 - 0.75
Calcium (Ca, %)	1.0 - 3.0	1.0 - 2.0
Boron (B, ppm)	25 - 50	25 - 50
Zinc (Zn, ppm)	30 - 60	30 - 60
Manganese (Mn, ppm)	25 - 1000	100 - 1500
Iron (Fe, ppm)	25 - 100	30 - 100
Copper (Cu, ppm)	5 - 15	5 - 15

Source: Wolf, T.K. (Ed.). 2008. Wine Grape Production Guide for Eastern North America. Natural Resource, Agriculture, and Engineering Service (NRAES), Ithaca, NY.