



Cultural Practices for Black Emerald Table Grapes

Nick Dokoozlian, Don Luvisi, Bill Peacock and Rudy Neja

Black Emerald is a seedless black table grape developed by David Ramming and Ron Tarailo of the USDA-ARS Horticulture Crops Laboratory in Fresno, CA. Black Emerald ripens with, or slightly behind, Perlette. Due to its early maturity the cultivar holds particular promise for the Coachella Valley and the southern San Joaquin Valley.

Black Emerald clusters are 7 to 8 inches long, shouldered and conical in shape, well filled to compact, and weigh about a pound. The berries are round to slightly oval, and jet black with a light waxy bloom. The berry skin is medium thick and tough, while the flesh is translucent and firm. The flavor is sweet and neutral. The primary problem with this cultivar is excessive fruit set, resulting in compact clusters with small berries. The natural berry weight of this cultivar is 2.5 to 3 grams, about 30% less than the weight of commercial Perlette berries.

Black Emerald is sufficiently fruitful when spur-pruned on bilateral cordons, often averaging 50 clusters or more per vine. Because of its relatively high fruitfulness, cluster thinning may be required to reduce crop load and ensure early maturation of well-colored fruit. When overcropped, fruit sugar and color accumulation are delayed. Cane-pruned vines produce high yields; however, cluster size is reduced and fruit

maturation delayed compared to spur-pruned vines.

We are currently developing guidelines for gibberellic acid berry thinning applications. Preliminary results indicate that a single treatment of 2 to 3 grams gibberellic acid per acre, applied at 75 to 80% bloom, is effective for fruit thinning. Excessive shot berries and reduced vine fruitfulness the year following the application result when gibberellic acid rates at bloom exceed this amount. Treatment timing is critical, as overthinning and excessive shot berries result when gibberellic acid is applied prior to 50% bloom.

Following fruit set, hand labor may be required to thin shoulders on clusters with excessive berry set. Little tipping is required due to the cultivar's moderate cluster length and weight.

Correct use of gibberellic acid during bloom can reduce berry set up to 30% compared to untreated vines. This reduction is sufficient to allow the application of both gibberellic acid and trunk girdles to increase berry size. Preliminary results suggest that berry size can be increased 10 to 20% by applying 20 grams of gibberellic acid per acre at berry set (4-5 mm berry diameter). These applications also increase berry diameter and length. It appears

that up to 20 grams of gibberellic acid per acre can be applied at berry set with no adverse effects on subsequent bud fruitfulness. However, these applications may increase berry shatter at harvest. Trunk girdles applied at fruit set increase berry weight approximately 15%. When girdles are combined with gibberellic acid sizing applications, berry weight can be increased 35 to 40 percent compared to untreated vines. We plan to repeat these

treatments for several seasons to determine their long-term effects on berry size and vine fruitfulness.

Black Emerald grapevines are vigorous when planted on their own roots. Standard table grape canopy management practices, including shoot thinning, basal leaf removal, and shoot trimming, should be employed.