

Problems That Inhibit the Expansion of the Commercial Muscadine Grape

Industry FruitSouth 5(2):28-29 1981

By Justin R. Morris, Department of Horticultural Food Science, Univ. of Ark., Fayetteville

For many good reasons the muscadine grape (Vitis rotundifolia, Michx.) has not realized its full potential in the South. The muscadine is a hearty native throughout much of the South, but efforts to create commercial enterprise of growing and processing the muscadine is still in development stages. Success with such a venture will require competent and dedicated producers, researchers, and Extension service personnel. Problems occur throughout production, harvesting, utilization, and marketing that inhibit the expansion of the muscadine grape industry.

The muscadine grape is not so easy to produce nor so free of pests as many growers have been led to believe. Once they have planted their initial tests or commercial vineyards, they soon discover that muscadine grapes have weed problems, insect problems, and disease problems much like their grape family cousins *labrusca* and *vinifera*. The most destructive or most difficult to control of the insect pests is probably the grape rootborer (*Vitacea polistiformis*, Harris) (1,6,8,9), and the most destructive of the diseases of muscadine grapes are bitter rot (*Melanconium fudigineum*), macrophoma rot (*Botryosphaeria dothidea*), ripe rot (*Glomerella cingulata*), powdery mildew (*Uncinula necator*), angular leaf spot (*Mycosphaerella angulata*), and black rot (*Guignardia bidwellii*) (2).

Research is finding ways to control, at least to an acceptable level, all of these cultural problems. However, research does not yet have the answers for the one production problem that is probably the major limiting factor for the muscadine grower. This formidable problem is the cost of establishing and producing the crop. The three year waiting period before any returns on the investment eliminates many prospective growers. Three years ago Arkansas growers estimated that an irrigated Geneva Double Curtain muscadine vineyard could be established and brought into production for approximately \$3000. These costs continue to increase each year. Most bankers are reluctant to lend money for large scale plantings of muscadine vineyards, especially when there may not be a proven market for the crop. In our area, most growers consider 40 acres of grapes as a minimum size unit for economically establishing and producing muscadines.

A recent Arkansas Research report (7) stated that with a constant level of total fixed costs for the basic unit of equipment, the average annual fixed costs per acre would decline from \$507.89 for a 4.20-acre vineyard to \$53.92 for 39.56 -acres. Assuming that average net cash returns per acre remained constant, average annual net profits would increase from approximately zero with the 4.20 acres to \$454.88 per acre with 39.56 acres. However, the problem is to find the banker that wants to invest over \$200,000 to allow a new grower to become established. The cost of interest on this amount at today's rates is also of concern.

In any fruit growing operation harvesting problems exist whether you pick your own or employ machine harvesters. With mechanical harvesting, scheduling and determining the proper harvest date for the various markets can be a major concern (4). Uneven ripening can present a problem. In a U-pick operation, some growers find that dealing with the public is a major problem while others enjoy this relationship. Whatever method is used for picking, getting the fruit harvested at the right time and to the right market without losses is not easy (5).

No less easy are the problems of packaging and marketing perishable fruit. If the muscadines are to be sold on the fresh-market, cleaning and packaging the fruit are a major concern. Very few muscadine growers have adequate packing-line equipment or knowledge of these operations. Growers that have found ways to harvest and attractively pack muscadines for the fresh-market have found that their short shelf-life remains a major problem (5).

Markets that process muscadines into more lasting products are welcome alternatives to the fresh fruit market. Wine continues to be a major market for muscadine grapes in the South, but establishment of a processing market for jam, jelly and juice has been a problem. Because processors have not been able to find a reliable supply of a high quality processing cultivar, jam and jelly products have been limited to small specialty packs which do not require large quantities of grapes. Problems are also associated with instability of many processed muscadine products (3,5). If a large volume of muscadines are to be used by processors, additional research will be needed to develop new products and to solve handling and marketing problems that exist with today's outlets for muscadine grapes.

The picture is not entirely grim, and interest is increasing among growers and processors in establishing a muscadine grape industry throughout the South. The majority of the new growers and processors that I have visited with consider the problems that I have listed as challenges and are determined to meet these challenges and develop their industry. Both the growers and their processors are devoted and are determined to be successful with their own business. They have all the attributes that are required to be successful, not the least of which is a willing ability to invest capital.

A real challenge for the new growers and processors is to work with Extension and research workers in their respective states in order to eliminate all problems possible as they develop this industry. The challenge for the Extension

and research workers is to solve the existing problems. This challenge falls at a particularly bleak time for researchers who are experiencing budget cuts. However, if the scientists band together through regional efforts, solutions will be found. The commercial muscadine grape industry is young, but with continued investment of capital and human resources, it can successfully grow into a mature and profitable business

LITERATURE CITED

1. All, J.N. and J.D. Dutcher. 1978. Current status of grape rootborer infestations in Georgia; promising chemical control methods. *J. Ga. Agric. Res.* 19:17-19.
2. Clayton, C.M. 1975. Diseases of muscadine and bunch grapes in North Carolina and their control. *N. C. Agric. Expt. Sta. Bul.* 451, 37 pp.
3. Flora, L.F. 1977. Considerations in marketing muscadine grapes. *Fruit South.* 1:130-132.
4. Lanier, M.R. and J.R. Morris. 1979. Evaluation of density separation for defining fruit maturities and maturation rates of once-over harvested muscadine grapes. *J. Amer. Soc. Hort. Sci.* 104: 166-169.
5. Morris, J.R. 1980. Handling and marketing of muscadine grapes. *Fruit South:* 4(2): 12-14.
6. Pollet, D.K. 1975. The grape rootborer in South Carolina. *Clemson Univ. Ext. Serv. Circl.* 550, 7 pp.
7. Price, Carter and J.F. Baldwin, 1980. Northwest Arkansas Table Grape Production: The relationship between machinery cost and acreage. *U. of Ark. Agric. Expt. Sta. Special Report* 87, 30 pp.
8. Sorensen, K.A. 1978. The grape rootborer, *N.C. Agric. Ext. Serv. Ins. Nt. G.* (3):4 p.
9. Wylie, W.D. 1969. Grape rootborer control. *Proc. Ark. St. Hort. Soc.* 90:71-73.