

to all stores, but only to larger-volume firms, thus simplifying many aspects of grower marketing.

Table 3 provides an example of how a grower could

Table 3. Example of estimating possible muscadine grape sales in two Florida market areas, using all grocery stores and only leading stores.

Market area ^z	Sales per store per 6-day week	All Stores ^z	Sales during		
	Pounds		Number	One week	Six weeks
Tallahassee	72	52	3,744	22,464	11.23
Gainesville	72	22	1,584	9,504	4.75
		Leading stores ^z			
Tallahassee	72	10	720	4,320	2.16
	24		240	1,440	0.72
	114		1,140	6,840	3.42
Gainesville	72	12	864	5,184	2.59
	24		288	1,728	0.86
	114		1,368	8,208	4.10

^zSee Table 2.

estimate possible grape sales to retail stores in a market area. With average sales per store of 72 pounds per week, the 52 stores in Tallahassee could sell 3,744 pounds of grapes in one week, or slightly over 11 tons over six weeks. If only leading stores were considered, sales in Tallahassee at 72 pounds per week would total 720 pounds, or could range from 240 to 1,140 pounds. Over six weeks, sales to the 10 stores might range from about three-fourths of a ton to almost 3.5 tons (Table 3).

Summary and Implications

The Florida muscadine grape grower has three primary market outlets: direct market or pick-your-own, commercial fresh market, and processed market. Factors to be considered when deciding which marketing alternative to pursue include variety, yield, production costs, harvesting

and marketing costs, management expertise, operator or owner goals, capital investment (past and planned), and an estimate of market potential. Considerations in determining the market potential include the population of consumers, the producing acreage within a few miles of the populace, the average yields for the acreage, and the customer purchases at direct market outlets or muscadine sales in supermarkets.

The direct market alternative does not generally require a large capital investment in marketing equipment and related activities, but it does require considerable personal time or hired labor and the vineyard must be accessible to customers. Conversely, entering the commercial fresh market and processed market requires the grower to adopt commercial production, and distribution techniques. Florida muscadine grape growers must decide, either individually or collectively, if they should pursue muscadine grape production and, if so, which market they wish to enter.

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FLORIDA'S GRAPE INDUSTRY—A SLEEPING GIANT

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Abstract. Our grape industry is no longer asleep—it is becoming an important sector of Florida's agricultural economy. New varieties of higher quality and larger fruit are forging this industry forward. The increasing population provides a ready local market for our grapes. As acreage increases the wine industry will follow. All these factors coupled with new production know-how will make the industry take on strides here-to-fore unheard of in our state.

Florida's grape industry is a fact not a fad. Native wild muscadines (*Vitis Rotundifolia*) stock used by the Spanish explorers and settlers in the late 1500's is being rediscovered in the form of new sophisticated varieties. These varieties are available today at a time that has unlimited potential. We have an increasing population of Florida consumers. We have a nation becoming more aware of domestic wines and we the Florida grapegrowers, who are planting these

new varieties which I call Supergrapes. It is these Supergrapes which will be the phenomenon of Florida Agriculture in the 80's, 90's and beyond.

This paper is personal and nontechnical. It is based on my twofold observations: My own as a grapegrower and vine producer for some twenty years and the gleaned thoughts of other growers I have visited in the Southeast. Further, so you will know my position, I believe in America, the goodness of Florida grapes, and profit. After all, that is the bottom line.

Every industry has growing pains and grapes are no exception. Our number one problem is supply. We need more grapes, good grapes and quality grapes. If there is a disgruntled grower who feels that we already have too many grapes, he's sleeping. There are not enough grapes being produced to satisfy any one of our four major uses or consumer groups. These consumers are: the grocery chains, the increasingly popular "Pick Your Own" operations, commercial wineries, and lastly but not insignificant is the food processors for jams, jellies, juices and the like.

I would like to evaluate each consumer in turn. As I

stated earlier, this paper is based on my own observations and since I have primarily a "Pick Your Own (PYO) vineyard I will start here.

Speaking for the Tampa Bay Area, the PYO appears to be the most popular outlet for muscadines. Small growers are attracted to this method because it requires a minimum of investment for equipment and usually generates the most profit per pound of grapes sold.

A PYO must be visible and easily accessible. Visibility from a well traveled road is almost a must. A grower would be ahead to sacrifice good soil for a premium location. By proper techniques, grapes can be grown on most any soil, but an isolated vineyard is a problem forever.

As a PYO location, our vineyard is nearly perfect. We are on an interstate highway interchange within thirty minutes from over a million and a half consumers. We have always run out of fruit every year and I have sold fruit for another grower who has one of those difficult to find vineyards.

With location decided, we turn to variety selection. Of the twenty-seven varieties we have planted over the years, we have come to rely on three varieties which produce about 90% of our fruit. The 'Dixie' and 'Coward' varieties are two and the newer 'Triumph' is the third.

These varieties solve most problems. They do not shatter, that is they do not fall off the vine when ripe. Pickers will not pick up fruit that has fallen on the ground. As you know, it is only the fruit that goes across your scales that counts.

These varieties are self-fertile. It has been our experience that female varieties do not fruit as heavily in coastal and southern Florida. We feel this is because we have such hot summers and warm winters. Therefore, we use self-fertile varieties because once again a good grape season is measured by pounds produced and sold.

These varieties are large. 'Triumph' and 'Coward' both produce large fruit, the 'Dixie' is somewhat smaller but still a respectable size. America still buys with its eyes so size is a constant marketing objective.

The varieties are good. Our grapes are primarily consumed as a fresh fruit. Between the three varieties, we are able to satisfy most tastes. We also have 'Noble', 'Welder', and 'Carlos' for the home winemakers. The PYO markets are becoming more popular and will continue to grow as Florida's population increases.

As we examine bulk sales to grocery chains, we see that stores are volume oriented. They must have large volumes of graded fruit. Because of their financial structure, few are interested in small quantities of fruit. The chain must have enough fruit to make advertising and marketing worthwhile without fear of running out of the product. Grading and packaging standardization seems to be current problems. Whatever the outcome, only good quality fruit must reach the markets. The Tampa Bay Area alone could consume all the presently grown muscadines in Florida, if they were properly graded and packaged.

As more grapes are grown, the winemakers will follow. Whether we are aiming at the amateur home winemaker or the large commercial winery, the fact remains that it takes a lot of grapes to make wine. The amateur winemaker is usually in the middle to upper income bracket and is affluent enough to pay 40-60 cents a pound for his fruit. We, ourselves, have always had more demand for wine or processing grapes than we have been able to satisfy. Demand from this sector continues to rise every season.

Commercial wineries are at a cross-road in Florida. Grapes and wine are synonymous throughout the world, and Florida is no exception. However, due to the lack of acreage of wine varieties, wineries have not made major inroads into the industry, . . . yet. One reason is the higher price the

grower gets from a chain store or PYO. Since wineries use fruit in vast quantities, grapes by the ton are pretty cheap by the pound. The main reason, however, is pure economics. Wineries are expensive to set up. When operating, they must have access to literally hundreds of tons of fruit. What we see is the classic cliché "chicken or egg" situation of growers unwilling to plant large acreage because there is not a large consumer, and the large wineries unwilling to get established in Florida because there are not enough bulk grapes.

Therefore, we are seeing the next best thing, the rise of the specialty winery. At present, all the wineries can be counted on one hand. For instance, there is a new winery in the Ocala area that was clamoring to get fruit obligated this past season. The winery needed between 100 and 130 tons of fruit for this year, next year who knows! As we look around, we are seeing more acreage going into wine grapes for this specialty market, 36 acres of 'Noble' in Hillsborough County, plus more acreage to our North. Remember the first wine made in the Western Hemisphere was made in what is now Florida. The early Spaniards knew what to do to those wild muscadine. It is only fitting that wine making should return to its home, Florida.

The processing aspect of muscadines is a seldom discussed phase of the industry. Aside from the obvious uses as jellies, jams, juices and dessert items; research is currently underway using partially dehydrated muscadines as a substitute for more costly dates and apricots. The thicker skins of some muscadines allow for varied uses, whereas thin skinned bunch grapes do not have this flexibility.

PYO vineyards offer unique marketing opportunities to specialty muscadine products. I am sure you are familiar with Calloway Garden's fine line of Pine Mountain muscadine products. Taylor Vineyards in Hammondsport, NY has a gift shop featuring grape jellies as well as an interesting and popular assortment of other grape food products. These processed products would fit well into a PYO vineyard, whereby the grower would realize maximum returns.

Now that I have told you that everyone wants grapes, fresh, preserved or fermented, we growers have other questions which we pose towards our researchers in the area.

The varieties of muscadines we use today are tough and durable plants which thrive on their own root system. Is that good enough? Grape growers are just now evaluating understocks to see which would improve juice solids, give higher yields, have more resistance to disease or more tolerance to different soil types. The citrus people know the importance of understocks. How about grapes?

Further, growers need a simple sure-fire method of grafting new varieties onto an old vine. A new variety grafted on an old established root system will be in production within eighteen months. This would cut the time required to get into production by one half. The way new varieties are emerging, a grower needs this flexibility in order to produce the type of fruit most profitable at a given time.

Is the understock a solution to the grape borer? Fortunately, muscadines have few pest that are difficult to control. Of these pests the grape root borer, is by far the worse confronting growers. The borer is unfamiliar to many growers because they don't recognize it. The borer is the larva of a wasp mimicking moth. Although the insect seldom kills a vine, it can tap the vines resources which result in reduced vigor and hence lower yields. The University of Georgia has done considerable work trying to come up with a practical control. At this time, I don't think anyone has a good method of combating the problem.

Again, I mention citrus by citing the fact that workers have developed rootstocks that are immune to the burrow-

ing nematode which plagued that industry a few years ago. In fact, this pest no longer is a major problem to that industry. There have been a multitude of problems corrected by changing to resistance rootstocks. Are there any rootstocks tolerant to the grape borer?

There are two fungus diseases that can damage or reduce the muscadine yields. They are black rot and bitter rot. Some years damage from fungus is very minor. These diseases can readily be controlled by a minimal spray program. Some growers consider spraying an added expense that is not worth the cost. I know several muscadine growers who do not own a spray machine. One of the best ways to reduce the disease problem is to plant varieties with the greatest resistance. This is not always possible.

What is the effect of spacing? The wide spacing of 20-30 years ago is obsolete. My original rows were planted on intervals of twenty feet. Today, we are at ten foot intervals. We have other questions such as, irrigation, and liquid fertilizers. How much is adequate, what is excessive? All these questions must be considered as all farming is going to have to become more intensive. In case someone here

has missed the last few years, land in Florida is expensive. We are forced to increase our productivity per acre just to survive.

We growers have our work cut out for us. In addition to growing more fruit, we must promote Florida grapes and their many uses, as well as foster more research so that we can cope with tomorrow's challenges.

There is no doubt in my mind that locally grown muscadines in many respects are equal to California or Northern grapes. In many ways muscadines are superior. We should be grateful that we can grow muscadines here and very successfully too.

In conclusion, the Florida grown muscadine grape have made only a slight dent in its overall potential. We are fast reaching the time when a vineyard along the side of a Florida road is no longer an oddity. A winery here and there will be the order of the day. All of this will come about from new and better production practices, new varieties, and confidence in Florida grapegrowing. I am proud to be in the company of Noah, Julius Caesar, Napoleon and Thomas Jefferson, they were grapegrowers too.

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IFAS EXTENSION INFORMATIONAL DELIVERY SYSTEM FOR GRAPES

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Abstract. Programs of the Florida Cooperative Extension Service (FCES) to disseminate technical information to Florida grape growers will be discussed. Extension program activities conducted include field days, workshops, grower meetings, demonstrations, Extension Agent training, publications, work with grape growers and other groups, and mass media presentations.

University of Florida IFAS Extension and research personnel historically have kept close ties with Florida grape growers by disseminating information to potential producers through field days, workshops, production talks, newsletters, publications, personal correspondence and mass media communication.

The Florida Grape Grower's Association (FGGA) was founded in 1923 and since that time has been closely associated with the Lake County Extension office and the IFAS Agricultural Research Center (ARC) near Leesburg. From 1923 to 1974, the FGGA was mainly active in Central Florida where the old bunch grape plantings were once located (1, 2). In 1974 the FGGA became a statewide organization, and the state Deciduous Fruit Extension Specialist of the Fruit Crops Department was asked to help expand the membership and to serve as secretary of FGGA. The FGGA expanded to serve all of Florida during the next 3 years and meetings were held in the western, northern and central areas of the state. When the FGGA had gained sufficient strength to support an elected secretary, the state Extension Specialist continued to serve the FGGA and the grape growers of Florida as a resource person. Many Ex-

tension activities are sponsored annually to support the Florida grape industry including field days, workshops, personal visits, publications, area meetings, demonstrations, mass media communications and Extension Agent training.

Field days and demonstrations. The FCES in cooperation with the IFAS ARC's with grape responsibilities have an active program for presenting grape information to the public in a series of field days and demonstrations. Field days are held at ARC, Ft. Pierce, ARC, Leesburg, and ARC Monticello. The meetings are characterized by a structured program where production talks are presented in a lecture fashion to attending growers. This is followed by a question and answer session and a tour of the grape planting on the site. During these tours, the grape varieties are observed and discussed (and sometimes tasted). Planting and training plus trellising are demonstrated as well as the many production practices such as irrigation, fertilization and pruning. This type of program provides a "hand-on" education where the audience has a chance to observe the production problems and how to solve them.

Field days and demonstrations are also held in various counties where grape products (jellies, preserves, juices, etc.) are displayed and various production problems are demonstrated or discussed.

County talks. Many County Extension programs include afternoon or evening programs on fruit production. An Extension specialist or researcher is usually requested at these meetings to present a structured talk. Discussions of production problems usually accompanied by slide presentations so that the audience can see pictures of the various insects and diseases as well as other problems that might confront grape growers are presented. These sessions are conducted with a question and answer session.

In-service training. County extension agents with grape responsibility are given extensive training in grape production and processing problems. This training covers insect and disease identification and control, economics, varieties, fertilization, pruning, trellising, training and many other