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Sent: Monday, March 17, 2008 11:37 AM
To: KY-Grape Alert (ky-grape-alert@lsv.uky.edu)
Subject: Kentucky Vineyard Newsletter March 17 2008
Attachments: Field Day Brochure.pdf

UK COOPERATIVE EXTENSION SERVICE
UNIVERSITY OF KENTUCKY — COLLEGE OF AGRICULTURE
KENTUCKY VINEYARD NEWSLETTER
17 March 2008
Editor: S. Kaan Kurtural

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1. Chilling unit accumulation across the state

Here is the situation so far at various reporting stations across the state in our commercial growing regions by 6 September 2007.

Station	Chilling units (45F base)
Lexington	950
Owensboro	932
Louisville	936
Covington	1090

You can also calculate chilling unit accumulation reports at the following URL: http://www.wagwx.ca.uky.edu/cgi-bin/generic_dd_www.pl for more locations throughout the state. These data are courtesy of the Agriculture Weather Center at the University of Kentucky, College of Agriculture

2. New Extension Publications form UK Viticulture

Two new publications are available from the University of Kentucky Cooperative Extension Service.

HO-88: Kentucky Viticultural Regions and Suggested Cultivars can be downloaded at the following URL: <http://www.ca.uky.edu/agc/pubs/ho/ho88/ho88.pdf>

HO-87: Vineyard Site Selection in Kentucky Based on Climate and Soil Properties can be downloaded at the following URL: <http://www.ca.uky.edu/agc/pubs/ho/ho87/ho87.pdf>

3. Viticulture Graduate Student Wins Research Award in Dallas, TX

Congratulations to Ms. Patsy E. Wilson (pictured), second-year graduate student who won the second place Masters Student award at the Norman F. Childers Masters Graduate Student Paper Competition during the 68th Annual Meeting of the Southern Region American Society for the Horticultural Sciences in Dallas, TX. Her paper was titled 'Grapevine Sustainability and Wine Composition Ameliorated by Severity of Canopy Management.'



Figure 1. Patsy E. Wilson at work

4. Vineyard Design

As the weather warms there will be quite a few acres going in the ground in Kentucky this year. I want to remind new and established growers, both, some of the basics of vineyard design.

Vineyards should be designed to achieve the following goals:

- Develop maximum bearing potential per acre in a minimum amount of time
- Optimize vine performance
- Prevent soil erosion
- Facilitate management of vine canopies
- Facilitate equipment operation

A plan of the prospective vineyard showing the location of rows, roads, and storage or work shed should be drawn up. Large fields should be divided into blocks of suitable size using surveying instruments. Main avenues and head-alleys should be 20 feet or wider to give farm machinery room to turn around. Usually, space equal to the row spacing is allowed on all sides of a vineyard block for normal farm operations. In very large vineyards, large blocks are separated by wide avenues to allow for air movement.

Direction of rows

Factors important in deciding the direction of rows are:

- Need for optimum light exposure
- Slope of the land
- Wind speed

Vineyards with rows running North-South intercept more light than to East-West rows. Light interception is greater for tall and closely spaced North-South rows. At windy sites, the rows should be parallel to the wind. East-West running rows should be used for raisin vineyards so that grapes placed on the ground to dry between the rows will receive the maximum amount of light.

Row spacing

One fallacy common to novice vineyardists is the notion that row spacing must conform to the requirements of the existing farm equipment. On the contrary, new planting should be at ideal spacing, and new equipments should be obtained as needed. If well planned, the new vineyard will outlast several sets of equipment, so equipment should be tailored to the vineyard. Vineyard tractors, sprayers and tillers have been designed for

narrow vineyard culture. Full powered tractors are available with 3-4 feet overall widths. With any projected planting, be certain the right equipment is available before planting.

Row spacing depends in part on the proposed training and trellising system to be used in the vineyard. Nine to 10-foot spacings between rows are common and generally sufficient, but 11 or even 12 feet between rows may be needed to accommodate divided training systems (e.g. Geneva Double Curtain), steep slopes. In general, as distance between rows increases, yield per acre decreases.

Vine spacing

The relative spacing of vines in the row has traditionally been determined by the expected vine size and vegetative vigor of a particular cultivar. The close spacing of vines in the row increases the number of buds per unit area of land. This will produce a yield increase up to a point where shoot crowding and shading will begin to reduce the fruitfulness of the vines. The vines can certainly support up to 8 buds per foot of row, however, recent research has shown that if more than 6 shoots per foot of row are retained, juice quality and winter hardiness are adversely affected. Spacing American and French-American hybrid vines in the row at 8 feet apart has proven satisfactory for average conditions. For vinifera vines, spacing them 7 feet in row has proven satisfactory. Highest yields generally have been obtained from vineyards containing 600 or more vines to the acre. Ideal spacings for American and French-American vineyards with single-canopy training systems are 8' x 9' (605 8' (778 vines/A), and for vinifera vineyards 7' vines/A). Increasing the row spacing over 10 ft initially decreases the establishment costs. However, row spacings over 10 ft will require the grower to push an additional 1000 cubic feet of air per second to provide adequate spray coverage for pest control, thus increasing operating costs. To calculate how many vines will be needed per acre see Table 1 below.

Table 1. Number of vines needed per acre based on Vine x Row spacing

Vine spacing (feet)	Spacing between rows (feet)					
	7.5	8.0	8 ½	9.0	9 ½	10.0
5	1162	1089	1025	968	917	871
6	968	908	854	807	764	726
7	830	778	732	691	655	622
8	726	681	641	605	573	545

Laying-out the vineyard

Various rectangular patterns prove to be satisfactory because more plants, hence earlier bearing surface can be put in the row. Another advantage to laying out the vineyard in rectangular spacings is reducing the amount of turns a tractor operator will have to make driving down longer rows thus having to make less turns, versus a vineyard laid out in a square pattern. The size of the field, topography, irrigation system chosen, and soil type determine the row length. On heavy soils, row length can be up to 700 ft. With drip irrigation the length of rows ranges from 300 to 600 ft. With sprinkler irrigation, rows can be up to 1000 ft long provided that head assemblies of the rows are strong enough to carry the load. Drip irrigation is recommended in Kentucky to reduce foliage wetting and disease incidence.

A planting to be laid out in a regular pattern is started by establishing a straight baseline. Usually, this is next to a fence or roadway. Next, establish lines at right angles to the base at both ends and 1 or 2 places in the middle of the plot. Right angles are easily established by using 3 chains (ropes or wires) whose lengths are in 3:4:5 proportions. For example, using lengths of 30, 40, 50 feet, the 40 feet length is placed on the baseline, with the 30 feet piece at approximate right angles. The 50-foot piece is then laid to close the triangle. The 30-foot piece is adjusted in either direction to just touch the end of the 50-foot piece. In this arrangement, the 30-foot piece is at right angles to the base line. Upright markers are then placed along the base line and the right angle lines to extend these lines (Figure 1). From this point on, any desired row and vine spacing can be established using a steel tape or marked rope to measure them. Small stakes or flags can be used to mark the locations for holes or locations to drive in the posts (Figure 2).



Figure 1. Marking row and vine spacings at right angles



Figure 2. Driving in posts at marked locations

5. Wine grape purchasing contracts

It is not too early to think about harvest contracts. Our industry has grown to such a size that a simple hand shake or a payment promise are not going to suffice. The following grape and wine business contracts are available for your use and have been contributed by Dr. Tim Woods of Ag. Economics and the New Crop Opportunities Center housed at the Department of Horticulture, University of Kentucky. The University is not in a position to adjudicate, arbitrate or resolve any conflicts you might have with private businesses.

Sample Winery Contracts

WARNING: These documents are offered as sample agreements and make no claim regarding legal authority or completeness. Contracts should always be reviewed by appropriate legal counsel for both buyer and seller.

[Sample purchase contract](#)

[Sample sale contract](#)

[Sample winegrape purchase agreement A](#)

[Sample winegrape purchase agreement B](#)

[Sample general agreement](#)

[Sample sales memo](#)

[Sample grape purchase agreement](#)

[Sample vineyard lease agreement](#)

[Sample cooperative agreement](#)

WARNING: Some Web sites to which these materials provide links for the convenience of users are not managed by the University of Kentucky. The university does not review, control or take responsibility for the contents of those sites.

6. Upcoming meetings:

UK Spring Viticulture Field Day set for March 29

By Aimee Nielson

LEXINGTON, Ky., (Mar 14, 2008) - Kentucky grape growers and winemakers will have an opportunity to see what's happening in the University of Kentucky College of Agriculture's vineyard during the Spring Viticulture Field Day on March 29. The event will begin and end at the E.S. Good Barn on the Lexington campus with afternoon sessions at the UK Horticulture Research Farm in south Lexington.

“With more than 700 acres, the grape and wine industry in Kentucky is really developing at a fast pace,” said Kaan Kurtural, UK viticulturist. “We have more than 200 growers and 47 wineries.”

Many Kentucky grape growers were hit hard by the last year's April freeze and the drought that followed. They hope 2008 will be a better year, and UK viticulture and enology specialists have plenty of information to share to

help make that happen.

Registration will begin at 9:15 a.m. at the E.S. Good Barn. UK Department of Horticulture Chair Dwayne Ingram will give the opening address at 10 a.m. The morning sessions include information from UK viticulturist Kaan Kurtural about dormant pruning for crop level management in vineyards, spring vineyard disease management from Annemiek Schilder, Michigan State University plant pathologist, and spring vineyard insect management from Ric Bessin, UK entomologist.

After a catered lunch, participants will board a bus and travel to UK's Horticulture Research Farm. Afternoon sessions will include Spring Vineyard Pre/Post Emergence Weed Management by Joe Masabni from the UK Research and Education Center in Princeton, Applied Vineyard Dormant Pruning Basics by UK horticulture graduate student Brandon O'Daniel and vineyard airblast sprayer safety/calibration by Chris Smigell, UK horticulture.

At 3 p.m. participants will ride the bus back to the UK campus and finish the day with an enology/wine tasting break-out session with UK Enologist Tom Cottrell and Patsy Wilson, UK horticulture graduate student.

Pre-registration is \$27.50 for Kentucky Vineyard Society members and \$32.50 for nonmembers if paid by March 21. Registration after March 21 is \$34 for KVS members and \$37.50 for nonmembers. Make checks payable to the Kentucky Vineyard Society and mail to Pamela Compton, UK Department of Horticulture, N308 Ag Science North, Lexington KY 40546-0091. For more information contact KVS at 859-527-6635. Registration form for this meeting is attached

7. Next issue

Next issue of this newsletter is going to be released around 1 April.

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