

FPMS GRAPE PROGRAM NEWSLETTER

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1998-99 Grape Orders

Once again it is time to review the offerings of grape materials available from FPMS and place orders for the 1998-99 season. Ordering materials and information about the newest available grape selections are included in this newsletter. See pages 5&6 for all selections available this season as California Foundation Stock. Be sure to return grape hardwood cutting orders to FPMS before November 15, 1998.

This deadline will be used to determine which customers are included when grape materials in short supply are allocated. Quantities of the newest materials will be especially limited. Customers who have not paid 1997 user fees due will not be included in the allocation process.



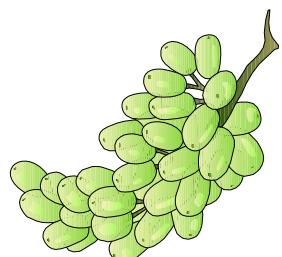
This is a good time to order mist propagated plants (MPP) in addition to hardwood cuttings. The newest selections are available only as MPP and are shown on the attached list entitled: "New Materials Available From FPMS in the 1998-99 Season". Most MPP ordered now will be ready for pick up from FPMS in the late summer 1999. The amount California Heritage materials offered for the first time include three well respected Cabernet Sauvignon selections from the Napa Valley. These were selected by Phil Freese and Deborah Golino from vineyards with a reputation for quality wine production. The Neibaum-Coppola selection (FPMS 29) was from the old plantings near their winery which provided premium quality grapes.

of time required to fill an MPP order varies by as much as 6 months to one year, however, depending on other orders for the same selection and the amount of original material available to work with. More exact estimates are available for specific selections upon request by contacting Kathy McGahan at FPMS (530-754-8100).

New Grape Materials

New materials offered for the first time this season include several exciting domestic and foreign selections. Thanks to the financial support from the California Fruit Tree, Nut Tree and Grapevine Improvement Advisory Board (IAB), FPMS has been able to collect, treat, and test valuable new clones for the public Grapevine Registration and Certification Program. Customers may now order **mist propagated plants** of the new selections. Hardwood cuttings will be available in about 2 years. Plants ordered now will be supplied starting in the summer of 1999 and they will have provisional foundation status (see article on page 2). The enclosed list entitled "New Materials Available from FPMS in the 1998-99 Season" shows all the new materials available.

The Disney Silverado selection (FPMS 30) was from an old vineyard off Silverado trail believed to be planted with the See clone of Cabernet. The Mondavi selection (FPMS 31) was from 50-year-old vines in the old Tokalon Vineyard. All three selections were infected with

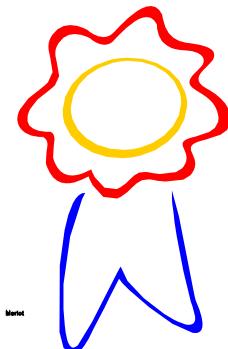


viruses including leafroll. Tissue culture was used to create selections that pass all the disease tests required by the California Grapevine Registration and Certification Program. A clonal research trial is planned by Deborah Golino and Jim Wolpert to test these "new" selections side by side with the original virus infected selections. The infected materials have been preserved at UC Davis since all of the original vineyards are gone. Hopefully, this trial will answer longstanding questions about the effects of virus on wine quality as well as give us information about the performance of FPMS 29, 30, and 31 in comparison to better known FPMS Cabernet clones. We very much appreciate the generosity of the three wineries for making these Heritage clones publicly available.

Bear Flat Merlot (FPMS 18) is another California Heritage selection being offered for the first time by FPMS. In the 1995 ASEV Proceedings of the International Symposium on Clonal Selection, Daniel Roberts reported that the Bear Flat Merlot was preferred over FPMS selections 1,3,6, & 8 due to ripening, yield and wine quality in the specific vineyard where the trial was conducted. Merlot 18 passed all the required disease tests without any treatment and was recently planted into the foundation block at FPMS. Many thanks to Sterling Vineyards for making this selection public.

No treatment was necessary to qualify Pinot noir 54 for the foundation block planting this year. It is reported to be from the French sparkling wine clone 871. It was donated for the FPMS public collection by a California vineyard that obtained the material from the Saanichton Plant Quarantine Station in British Columbia.

Two old FPMS selections have just been added



back into the foundation block. One is Cabernet Sauvignon 08 which is a high yielding late maturing selection according to Jim Wolpert in the 1995 ASEV Proceedings of the International Symposium on Clonal Selection. Pinot noir 22 was also just planted into the new foundation block. It is a heat treated Gamay Beaujolais type of Pinot noir. Material from these selections was qualified for the current foundation block using all the same tests required for new domestic selections.

New Rupestris Stem Pitting (RSP) Infected Materials

Rupestris Stem Pitting (RSP) infected materials are maintained and distributed from the FPMS RSP collection as nonregistered material. All the selections in the RSP block were tested for disease on all the field indicators. Some of the selections were also checked using ELISA and herbaceous disease tests. Only materials that were negative for all diseases except RSP on all the tests run are included in this collection.

This year 6 Chardonnay and 9 Pinot noir selections, which are all reported to be from French sparkling wine clones, were added to the RSP block. A new Nebbiolo selection that is reported to be from the Italian clone CVT 142 was also just planted. In addition, Carmenere 01, which was discussed in last year's newsletter, was planted into the RSP block this year because it was found to be Stem Pitting infected.

A list showing all the selections available from the RSP+ block is enclosed with this newsletter. Selections available for the first time this year are underlined. Efforts are underway to eliminate RSP from most of the selections planted in the block. Information about tissue culture elimination work and retesting of tissue culture materials is shown in the "attempts to eliminate RSP" column.

Old Foundation Vineyard Removal

The old foundation vineyard at FPMS is scheduled for removal in the spring of 1999. Most of this vineyard was planted in the 1960s, so many vines were over 25 years old when we stopped using it as a source of foundation stock in 1993. Some disease is now known to exist in this vineyard including *rupestris* stem pitting, leafroll, measles, and eutypa, but the records are incomplete and exact information about the disease status of each vine is not always known.

Several FPMS advisors and committees have reviewed the materials in the old foundation vineyard and made recommendations about what is appropriate to preserve for the future. Most of the commercially important selections have been retested, qualified, and planted in the new foundation blocks. Others are now in the process of being treated and retested to qualify them for future foundation plantings. Some of the more eclectic materials will be transferred to the UCD Viticulture Department and National Germplasm Repository collections this winter, and selections judged to be unimportant will be discarded. Customers, willing to assume all the associated risks, may order material out of the old foundation vineyard for the last time this winter.

Provisional Registration Status

We have recently started to use a new, provisional ("P") registration category at FPMS. In the past FPMS grape materials were either labeled registered ("R") or non-registered ("N"). Sometimes, however, this was not enough information to determine which materials were eligible for

California registered increase block plantings. The provisional status was created to distinguish registered materials eligible for increase block plantings from non-registered materials that will never be eligible for foundation stock status.

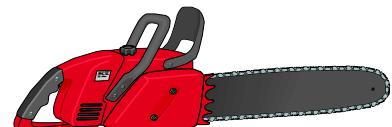
"Provisional foundation stock" means propagative materials taken from grapevines planted in the foundation block before they are professionally identified. All vines in the foundation block, including provisional vines, have been propagated from selections that are negative on all prescribed disease tests. Provisional foundation stock may be planted in registered increase blocks according to the California Department of Food and Agriculture (CDFA). If foundation vine sources of provisional materials are later professionally identified then they become registered foundation mother vines and all propagation materials from those vines qualify for retroactive foundation stock tags. Retroactive tags are issued to customers for qualified materials upon request.

The customer assumes all the risk associated with purchasing provisional materials. If the mother vines are found to be incorrectly identified, then the registration status is changed to non-registered and no foundation tags are issued. CDFA may require that incorrectly identified materials be removed from increase blocks. FPMS does not give replacements or refunds for provisional materials later found to be incorrectly identified or diseased.

The provisional status is most frequently associated with new materials just planted into the foundation block. Most of the selections on the FPMS new materials list have provisional registration status. Customers who receive provisional foundation stock will see the "P" designation in the registration status column on their packing list. Customers are advised to contact FPMS about two years after receiving provisional foundation stock to find out about the registration status and availability of foundation tags.

Retesting Foundation Mother Vines

Upgrading quality control for vines in the foundation block has been a





in the foundation block is now tested by ELISA for grapevine fanleaf virus and tomato ring spot virus every other year. In addition, every vine is tested by ELISA for leafroll-associated viruses every third year. Some of the vines currently planted in the foundation block, however, have been propagated from materials that have not been field index tested since the 1960s.

Complete retesting is advisable periodically to check both for leafroll disease caused by strains not yet identified and mechanically transmitted diseases other than fanleaf and tomato ring spot. Repeating the field index will also detect new or previously

high priority for FPMS in the 1990s. Every vine undetected fleck, corky bark and rupestris stem pitting disease.

The IAB has provided funds to woody index (field test) about 20 vines per year in 1997-98 and 1998-99. In addition to the woody index, FPMS is also rechecking these vines using all the herbaceous and ELISA tests used to qualify new materials for the foundation block. Eight of the tests in progress have never been used to check these vines before and are not recognized in the current program regulations. We hope to make this an ongoing program so that eventually all the vines from the important selections in the foundation block will be completely retested.

Results from the 1997-98 tests will be reported to CDFA and the participants in the California Grapevine Registration and Certification Program in the late spring of 1999. Results from the 1998-99 tests will be reported to CDFA and the participants in the California Grapevine Registration and Certification Program in the late spring of 2000. **Foundation mother vines being retested in 1997-98:**

<u>Variety/selection#</u>	<u>Source Plant Location</u>
Cabernet Sauvignon 04	BKN B2 V5
Chardonnay 04	BKN C5 V5
Dolcetto 01	BKS H4 V7
Merlot 06	BKN A13 V7

Merlot 09	BKS H4 V9
Pinot noir 09	BKS C15 V7
Pinot noir 16	BKN A16 V1
Pinot noir 23	BKN A16 V5
Pinot noir 37	BKS J6 V3
Primitivo 03	BKS G12 V5
Primitivo 05	BKS K6 V7
Primitivo 06	BKS K6 V9
Redglobe 01	BKS G13 V1
Redglobe 01	BKS G13 V2
Redglobe 01	BKS G13 V3
Redglobe 01	BKS G13 V4
Semillon 05	BKN A18 V9
Shiraz 07	BKS H12 V5
Thompson Seedless 02A	BKN A19 V5
Thompson Seedless 02A	BKN A19 V6
Zinfandel 01A	BKN C19 V9

Foundation mother vines being retested in 1998-99:	
<u>Variety/selection#</u>	<u>Source Plant Location</u>
Cabernet Sauvignon 04	BKN B2 V6
Cabernet Sauvignon 06	BKN B2 V10
Cabernet Sauvignon 07	BKN C2 V1
Cabernet Sauvignon 15	BKN A3 V11
Grenache 03	BKN A11 V4
Malbec 04	BKS G3 V9
Malbec 06	BKN B12 V9
Petit Verdot 01	BKN B15 V2
Petit Verdot 02	BKN B15 V8

Pinot noir 32	BKS H2 V3
Pinot noir 39	BKS G13 V7
Sangiovese 02	BKS G16 V3
Sangiovese 04	BKS H9 V10
Semillon 05	BKN A18 V10
Shiraz 01	BKN B18 V7
Tempranillo 02	BKS H10 V7
Tinto Cao 01A	BKN B19 V1
White Riesling 09	BKS H14 V1
White Riesling 12	BKN C19 V8
Zinfandel 06	BKS H13 V1

REGISTERED GRAPE SELECTIONS OFFERED BY FPMS IN THE 1998-99 DORMANT SEASON

KEY: France = reported to be French clone # shown. ***Italic bold*** = proprietary or patented. Underlined selections were registered for the first time this season and hardwood cutting supplies may be extremely limited. All registered selections are available as mist propagated plants on a custom order basis.

039-16 01	CALMERIA 04	DOG RIDGE 02
043-43 01	CALMERIA 05	CHARDONNAY 22
AGLIANICO 01	CALMERIA 06	CHARDONNAY 23
ALDEN 01	CALMERIA 07	<i>CHARDONNAY</i> 25
ALDEN 03	CALMERIA 09	DOG RIDGE 04
ALEATICO 01	CALMERIA 10	<i>CHARDONNAY</i> 27
ALEATICO 03	CALZIN 02	DOG RIDGE 05
ALEATICO 04	CALZIN 04	<i>CHARDONNAY</i> 28
ALICANTE BOUSCHET 01	CALZIN 05	CHARDONNAY 37 (France 95)
ALICANTE BOUSCHET 02	CANNER 03	CHARDONNAY 38 (France 95)
ALICANTE BOUSCHET 03	CARDINAL 01	CHARDONNAY 39 (France 78)
ALIGOTE 01	CARDINAL 03	CHARDONNAY 41 (France 352)
ALMERIA 01	CARDINAL 04	CHARDONNAY 42 (France 277)
ALMERIA 02	CARDINAL 05	<i>CHARDONNAY</i> 43 (France 75)
ARAMON 02	CARDINAL 07	<i>CHARDONNAY</i> 44 (France 77)
AUTUMN BLACK 01	CARDINAL 08	CHARDONNAY 45 (France 77)
<u>AUTUMN ROYAL</u> 01	CARIGNANE 02	CHARDONNAY 46 (France 75)
AUXERROIS 01	CARIGNANE 03	CHARDONNAY 48 (France 538)
BACO BLANC 03	CARIGNANE 06	CHARDONNAY 49 (France 277)
BACO BLANC 04	CARMINE 01	CHARDONNAY 50 (France)
BARBERA 02	CARNELIAN 01	CHASSELAS DORE 01
BEAUTY SEEDLESS 01	CARNELIAN 02	CHASSELAS DORE 03
BLACK CORINTH 02	CARNELIAN 03	CHASSELAS DORE 04
BLACK EMERALD 01	CATAWBA 01	CHASSELAS DORE 05
BLACK MALVOISIE 02	<i>CENTENNIAL SEEDLESS</i> 01	CHASSELAS ROUGE 01
BLACKROSE 03	CENTURION 01	CHENIN BLANC 01
BLAUER PORTUGIESER 01	CENTURION 02	CHENIN BLANC 02
BLAUER PORTUGIESER 02	CHARDONNAY 04	CHENIN BLANC 03
BRONX SEEDLESS 01		CHENIN BLANC 04
BURGER 01	CHARDONNAY 05	CHENIN BLANC 05
BURGER 02		CLAIRETTE BLANCHE 01
BURGER 03	CHARDONNAY 06	CONCORD 05
BURGER 04		CONCORD 06
BURGER 05	CHARDONNAY 07	CONCORD 07
BURGRAVE 01		CORVINA VERONESE 01
CABERNET FRANC 01	CHARDONNAY 08	COSMO 10 01
<u>CABERNET FRANC</u> 03 (ISV 1)		COSMO 2 01
CABERNET FRANC 04 (France 332)	CHARDONNAY 09	COUDERC 1202 02
CABERNET FRANC 05	CHARDONNAY 10	COUDERC 161-49 01
CABERNET SAUVIGNON 02		COUDERC 1613 05A
CABERNET SAUVIGNON 04	CHARDONNAY 11	COUDERC 1616 01
CABERNET SAUVIGNON 05		COUDERC 1616 02
CABERNET SAUVIGNON 06	CHARDONNAY 12	COUDERC 1616 03
CABERNET SAUVIGNON 07		COUDERC 1616E 01 (France)
CABERNET SAUVIGNON 10	CHARDONNAY 13	COUDERC 3306 01
CABERNET SAUVIGNON 11		COUDERC 3309 01
CABERNET SAUVIGNON 12	CHARDONNAY 14	COUDERC 3309 02
CABERNET SAUVIGNON 13		COUDERC 3309 04
CABERNET SAUVIGNON 14	CHARDONNAY 15	COUDERC 3309 05
CABERNET SAUVIGNON 15		CRIMSON SEEDLESS 01
CABERNET SAUVIGNON 19	<i>CHARDONNAY</i> 17	DATTIER 01
CABERNET SAUVIGNON 20		DATTIER 04
CABERNET SAUVIGNON 21	CHARDONNAY 18	<i>DAWN SEEDLESS</i> 01
CABERNET SAUVIGNON 22		DELIGHT 01A
CABERNET SAUVIGNON 23	CHARDONNAY 20	DIAMOND 02
CABERNET SAUVIGNON 24		DIAMOND 03
CABERNET SAUVIGNON 25	CHARDONNAY 21	DOG RIDGE 01
		FRENCH COLOMBARD 01
		FRENCH COLOMBARD 03

FURMINT 01	GRAY RIESLING 03	HARMONY 04	LIMBERGER 01
GAMAY NOIR 02 (France 221)	GRAY RIESLING 04	HARMONY 05	LIMBERGER 02
GAMAY NOIR 03 (France 282)	GRAY RIESLING 05	HIMROD 01	
GAMAY NOIR 05 (France 509)	GRAY RIESLING 06	HIMROD 02	LN33 01
GEWURZTRAMINER 01	GREEN HUNGARIAN 01	ISABELLA 01	LOOSE PERLETTTE 01
GEWURZTRAMINER 02	GREEN HUNGARIAN 02	ITALIA 04	LOOSE PERLETTTE 02
GEWURZTRAMINER 03	GREEN VELTLINER 01	ITALIA 05	LOOSE PERLETTTE 03
GEWURZTRAMINER 04	GRENACHE 01A	JULY MUSCAT 01	LOOSE PERLETTTE 04
GOLD 01		KOBER 125AA 01	
GRAND NOIR 01 (France 221)	GRENACHE 03	KOBER 5BB 02	PINOTAGE 01
<i>GRAVESAC 01</i>	HARMONY 01	KOBER 5BB 04	PLAVINA 01 (Italy)
GRAY RIESLING 01	HARMONY 02	KOBER 5BB 06	PRIMITIVO 03
GRAY RIESLING 02	HARMONY 03	LAMBRUSCO 01	PRIMITIVO 05
MALAGA 02	MISSION 02	ORANGE MUSCAT 04	PRIMITIVO 06
MALAGA 03	MISSION 06	ORANGE MUSCAT 05	QUEEN 02
MALAGA 04	MISSION 07	ORANIENSTEINER 01 (Germany)	QUEEN 03
MALAGA 05	MISSION 08	PALOMINO 01A	QUEEN 04
MALBEC 04	MISSION 09	PAULSEN 1045 01	REFOSCO 02
MALBEC 06	MISSION 11	PAULSEN 1103 01	RIBIER 01A
MALBEC 09	MISSION 12	PAULSEN 1103 02	RIBIER 03
MALEGUE 44-53 01	MISSION 13	PAULSEN 1103 03	RICHTER 110 01
MALVASIA BIANCA 03	MISSION 14	PAULSEN 779 01	RICHTER 99 01A
	MONTEPULCIANO 01 (Italy)	PAULSEN 779 02	RIESLING 01
<i>MARROO SEEDLESS 01</i>	MONUKKA 01	PETIT BOUSCHET 01	RIPARIA GLOIRE 03
MATARO 01	MONUKKA 02	PETIT SIRAH 03	RIPARIA GLOIRE 04
MATARO 03	MONUKKA 03	PETIT VERDOT 02	RKATSITELI 01 (Leningrad)
MATARO 04	MONUKKA 04	PEVERELLA 01	RKATSITELI 02 (Leningrad)
MELON 01	MUSCAT BLANC 01	PEVERELLA 02	RKATSITELI 03 (Leningrad)
MELON 02	MUSCAT HAMBURG 03	PEVERELLA 04	RKATSITELI 04 (Leningrad)
MELON 06	MUSCAT OTTONEL 01	PIERCE 01	RKATSITELI 05 (Leningrad)
MELON 07	MUSCAT OTTONEL 04	PINOT BLANC 05	ROMULUS 02
MERLOT 01	MUSCAT SAINT-VALLIER 01	PINOT BLANC 06	ROMULUS 03
MERLOT 03	MUSCAT SAINT-VALLIER 02	PINOT BLANC 07	ROYALTY 01
MERLOT 06	MUSCAT SAINT-VALLIER 03	PINOT GRIS 04 (France 53)	ROYALTY 02
MERLOT 08	NAPA GAMAY 01	PINOT GRIS 05 (France 53)	ROYALTY 03
MERLOT 09		PINOT MEUNIER 01	RUBIRED 01
MERLOT 10	NAPA GAMAY 02	PINOT NOIR 01A	RUBIRED 02
MERLOT 11		PINOT NOIR 02A	RUBIRED 03
MERLOT 12	NAPA GAMAY 03	PINOT NOIR 09	
MERLOT 15 (France 181)		PINOT NOIR 13	
MEUNIER 01	NEBBIOL 01	PINOT NOIR 15	
MILLARDET ET DE GRASSET	NEBBIOL LAMPIA 01	PINOT NOIR 16	
	NEW YORK MUSCAT 01	PINOT NOIR 18	
101-14 01	NIABELL 01	PINOT NOIR 19	
MILLARDET ET DE GRASSET	NIABELL 02	PINOT NOIR 23	
125-1 01 (France)	NIAGARA 01	PINOT NOIR 31	
MILLARDET ET DE GRASSET	NIAGARA 02	PINOT NOIR 32	
219A 01 (France via	ODEM 01	PINOT NOIR 37	
Geneva)	ONTARIO 01	PINOT NOIR 38	
MILLARDET ET DE GRASSET	OPPENHEIM #4 09	PINOT NOIR 39	
41B 01	OPPENHEIM #4 10	PINOT NOIR 40	RUBY CABERNET 02
MILLARDET ET DE GRASSET	OPPENHEIM #4 11	PINOT NOIR 44 (France 113)	RUBY CABERNET 03
41B 02	OPPENHEIM #4 13	PINOT NOIR 46 (France 114)	RUBY SEEDLESS 02
MILLARDET ET DE GRASSET	OPPENHEIM #4 14	PINOT NOIR 47 (France 114)	RUBY SEEDLESS 03
420A 04	OPPENHEIM #4 16 (ISV-39-8)	PINOT NOIR 48 (France 162)	RUGGERI 140 01
MILLARDET ET DE GRASSET	OPPENHEIM #4 17 (Canada)		
420A 05	ORANGE MUSCAT 01A	PINOT ST. GEORGE 01	
	ORANGE MUSCAT 02	PINOT ST. GEORGE 02	
	ORANGE MUSCAT 03	PINOT ST. GEORGE 03	
		PINOT ST. GEORGE 05	

RUGGERI 140 02
RUGGERI 225 01
SABAL KANSKOI 01
SAINT EMILION 02
SAINT MACAIRE 03
SALT CREEK 01A
SALT CREEK 02A
SALT CREEK 03
SALT CREEK 04
SALT CREEK 06
SALT CREEK 07
SALT CREEK 08
SALT CREEK 09
SALVADOR 01
SANGIOVESE 02
SANGIOVESE 04
SAUVIGNON BLANC 01
SAUVIGNON BLANC 06
(ISV-CPF-5)
SAUVIGNON BLANC 07
(ISV-CPF-2)
SAUVIGNON GRIS 01
SAUVIGNON GRIS 03 (France
253)
SAUVIGNON VERT 01
SCARLET 01
SCARLET 02
SCHUYLER 03
SCHWARZMANN 01
SEEDLESS TOKAY 01
SEIBEL 13053 01
SEIBEL 13053 02
SEMILLON 02
SEMILLON 03
SEMILLON 04
SEMILLON 05
SEMILLON 06
SEMILLON 07
SENECA 01
SHIRAZ 01
SHIRAZ 02
SHIRAZ 03
SHIRAZ 04
SHIRAZ 05
SHIRAZ 06
SHIRAZ 07
SOUZAO 01
SUAVIS 01
SYLVANER B8 08
SYLVANER B8 09
SYMPHONY 03
TANNAT 01
TELEKI 5C 01
TELEKI 5C 02
TELEKI 5C 03
TELEKI 5C 05
TELEKI 5C 06
TELEKI 5C 07
TELEKI 5C 08
TELEKI 5C 09
TELEKI 5C 10
TELEKI 8B 01

TEMPRANILLO 02
THOMPSON SEEDLESS 02A
THOMPSON SEEDLESS 05
THOMUSCAT 01
THOMUSCAT 02
TINTA AMARELLA 01(Jackson,
CA)
TINTA AMARELLA 02 (Portugal)
TINTA MADEIRA 01
TINTO CAO 01A (UCD Viticulture)
TINTO CAO 02 (selection #1A)
TINTO CAO 04 (Jackson, CA)
TOCAI FRIULANO 01
TOURIGA 01
TOURIGA 02
TRAMINER 01
TREBBIANO TOSCANO 01
TREBBIANO TOSCANO 02
TROUSSEAU 08
TROUSSEAU 09
VERDELHO 02 (UCD, Viticulture)
VERNACCIA 01
VIognier 01
V. RUPESTRIS CONSTANTIA 01
V. RUPESTRIS CONSTANTIA 03
V. RUPESTRIS CONSTANTIA 04
WHITE RIESLING 02
WHITE RIESLING 04
WHITE RIESLING 09
WHITE RIESLING 10
WHITE RIESLING 12
ZINFANDEL 01A
ZINFANDEL 02
ZINFANDEL 03
ZINFANDEL 06

Vines on Hold at FPMS

When occasional questions arise regarding the health and/or genetic characteristics of a vine or selection in the foundation vineyard, the vine(s) are put on hold. Circumstances that trigger a hold designation are not certain or serious enough to cause a vine to be removed from the California Grapevine Registration and Certification Program. However, materials are not distributed from vines on hold unless customers are informed about the concerns that generated the hold and are willing to accept all risks associated with the condition.

Most "holds" are the result of questionable results from laboratory or field disease tests. However, sometimes vines are put on hold because visual symptoms that may indicate general health or variety identification problems are noticed. Each vine in the foundation block is visually inspected twice a year by the FPMS Plant Pathologist, Dr. Adib Rowhani, and CDFA inspectors. From time to time grape variety experts also inspect the foundation block and comment on variety names used. Vines showing general health problems or symptoms of diseases such as measles or eutypa are put on hold. Vines suspected of being incorrectly

Vines placed on hold are reviewed periodically by Dr. Rowhani, other plant pathologists, and grape variety experts. If further testing or observations clear the vine from suspicion of disease, genetic or naming problems, the hold is removed. If questions persist, the hold remains and, if they are unquestionably linked to a problem that will adversely affect propagation materials, the vine is removed from the foundation block.

One of the selections placed on hold this year is Petit Verdot 01. Both Petit Verdot selections 01 and 02 were reported to be shy bearing in the October 1991 FPMS Newsletter, but the severity of the problem was not clear. Subsequent observation has shown that the Petit Verdot 01 vines produce an extremely small crop, so they were all placed on hold. Anyone requesting this selection will be notified that the selection is not recommended for commercial vineyards due to low yields. Petit Verdot 02 produces a typical crop and is being distributed without special disclaimers.



named are also placed on hold.

R&C Program changes

New draft regulations for the California Grapevine Registration and Certification Program have been prepared and are slowly making their way through the state review process. A summary of the high points of the new regulations was given in the FPMS newsletter last year. After an internal CDFA review process is completed, the regulations will be published and there will be a 45-day public comment period. A public hearing may be held, if requested, during this 45-day period. To request a copy of the draft regulations, contact Umesh Kodira at the Nursery Program office by phone: (916) 654-0435 or E-mail: Ukodira@cdfa.ca.gov.

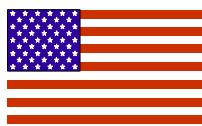
California Grape Register

The "California Grape Register" is a reference booklet published annually by FPMS to help growers and nurseries locate California certified grape stock. Nursery sources for registered grape selections are organized alphabetically by grape variety and nursery name. Information is also given regarding the source, treatment and testing history for each registered selection.

In this year's edition, a new section was added and titled "Additional Registered Grape Selections Recognized by CDFA". This section lists grape selections that are still registered in the California Grapevine Registration and Certification Program but are no longer available from FPMS as foundation stock. Qualified source vines do not exist in the current FPMS foundation blocks for selections in this category. Registration at the private increase block level has been continued by CDFA, however, because qualified materials from old FPMS source vines were distributed and planted in private increase blocks in the past. Popular

Grape quarantine laws and assorted certification programs in the USA have evolved over the last 45 years into a functional system for plant protection and disease control given the limited resources available. The U.S. federal quarantine laws prohibit entry of grape materials infected with most harmful grape disease or pests, even if the diseases are already present in the country. Quarantine tests are conducted exclusively by a few U.S. scientists

and/or important



selections on the "Additional Registered Selections" list will be tested and treated as necessary to requalify mother vines for planting in the current FPMS foundation blocks. Cabernet Sauvignon 08 and Pinot noir 22 are examples of selections that are undergoing this process.

To order a copy of the "California Grape Register" or any other grape publication distributed by FPMS, use the enclosed publication order form.

NAPPO

Grape growers and nurseries throughout the country are following the efforts of the North American Plant Protection Organization (NAPPO) to develop recommendations for Canada, Mexico, and the USA regarding grape quarantine standards. NAPPO is a regional organization under the umbrella of the International Plant Protection Convention (IPPC) of the Food and Agriculture Organization (FAO) of the United Nations. NAPPO is recognized in the North American Free Trade Agreement as the body which will provide technical assistance to trade experts in the field of plant health.

NAPPO will use guidelines established by the IPPC to develop standards to regulate and test for quarantine pests of grapevines in North America. The IPPC allows for quarantine regulation of pests that are officially controlled or absent from the quarantine area, but other kinds of quarantine restrictions are considered unfair trade barriers. Unfortunately, the IPPC quarantine model does not fit the current USA grape quarantine laws.

with special permits, and they have frequently detected disease in certified grape materials from other countries. Most diseases are eliminated from infected materials before release from quarantine. This prevents widespread propagation of popular new foreign materials while they are still diseased. Introduction of new strains of known diseases that may not be present or widespread in the USA is also prevented. Since foreign grape selections only

need to be tested once in this system, it costs less than an ongoing program to monitor foreign testing programs and sources.

Voluntary grapevine certification programs in California, Virginia, Oregon and Washington significantly limit disease in grape planting stock used in the USA because certified stock is from sources that test negative for harmful

diseases. Not all grapevines propagated in the country are certified, but the benefits from the programs extend beyond the official certified stock.

Non-certified stock is often derived from certified plantings, thereby improving the probability that the vines will be healthy. Certification programs help to educate growers about grape diseases, so expectations regarding grape planting stock quality

and nursery standards are higher. Certification programs also serve as centers where problems related to grape planting stock are resolved. These programs are financially self-supporting.

In the spring of 1998, the United States Department of Agriculture (USDA) sent a letter to selected grape growers and nurseries explaining the authority of IPPC and NAPPO and detailing possible grape quarantine scenarios that would be compatible with IPPC guidelines (copies are available from FPMS upon request). Removing all endemic diseases from the U.S. federal grape quarantine laws was one possibility suggested in the

letter. This would probably reduce regulatory costs, but foreign materials carrying fanleaf, leafroll, corky bark and other serious diseases could flood into the country as a result and seriously harm the industry. Another choice would be to take no action (i.e. refuse to adopt standards after NAPPO approves them) which might leave the USA vulnerable to lawsuit in the World Court.



1999.

Only one option was suggested that would preserve the long term quality of health in USA vineyards. It involves creating and implementing regulatory programs that control the diseases and pests to be retained in the federal grape quarantine laws. A nationwide grapevine certification program would be one way to do this. Some of the elements from existing certification programs could serve as a basis for a national program, but significant amounts of time and money would be needed for start up and maintenance. Meetings where grape growers and nursery people from around the nation can meet to discuss these issues are currently being planned for the spring of

Work is in progress to finalize and adopt NAPPO Grape Quarantine Standards that will be recommended to Mexico, Canada and the USA. Each country will review the standards and decide to adopt or reject them. Once the USA has accepted NAPPO standards, changes will occur. To date, no deadlines have been set for completing these steps, but the NAPPO officials writing grape standards are currently asking for feedback from the grape industry. It is important to communicate a willingness to address grape quarantine issues to them and ask for enough time to make decisions,

formulate plans, raise money and implement appropriate programs and laws to address forthcoming NAPPO standards.

More information about NAPPO is available on the Internet at: http://www.nappo.org/menu_E.shtml. Comments regarding grape NAPPO standards

A New Test for Grapevine Rupestris Stem Pitting

By Dr. Adib Rowhani

GRAPEVINE RUPESTRIS STEM PITTNG DISEASE (RSP) CAUSES A SLOW DECLINE IN THE GROWTH OF GRAPEVINES AND, AFTER SEVERAL YEARS, AFFECTED VINES MAY BE SMALLER THAN HEALTHY ONES. Only limited research documenting these



EFFECTS ON DIFFERENT GRAPEVINE SPECIES AND CULTIVARS HAS BEEN PUBLISHED, SO IT IS DIFFICULT TO ASSESS THE MAGNITUDE OF THE EFFECT OF THIS DISEASE ON GRAPE PRODUCTION.

CURRENTLY, RSP IS DETECTED BY INDEXING ON *Vitis rupestris* cv. ST. GEORGE. SYMPTOMS INCLUDE SMALL PITS ON THE WOODY CYLINDER IMMEDIATELY BELOW THE INOCULUM CHIP BUD, BUT OCCASIONALLY PITS AND GROOVES HAVE OCCURRED ELSEWHERE ON THE WOOD CYLINDER.

IN THE PAST YEAR WE HAVE BEEN ABLE TO CLONE, SEQUENCE, AND CHARACTERIZE THE GENOME (GENETIC MATERIAL) OF A VIRUS ASSOCIATED WITH RSP, HEREAFTER REFERRED TO AS GRAPEVINE RUPESTRIS STEM PITTNG ASSOCIATED VIRUS (GRSPAV). WE HAVE DETERMINED THE GENOME ORGANIZATION OF THIS VIRUS AND FOUND IT TO BE MOST SIMILAR TO APPLE STEM PITTNG. ALTHOUGH WE HAVE ISOLATED AND CHARACTERIZED A VIRUS FROM AN RSP-INFECTED VINE AND ESTABLISHED A GOOD CORRELATION BETWEEN THIS VIRUS AND THE DISEASE BY PCR, MORE RESEARCH IS REQUIRED TO: 1) CLEARLY ESTABLISH A CAUSAL RELATIONSHIP, 2) DETERMINE NUMBER OF STRAINS ASSOCIATED WITH THE DISEASE AND SYMPTOM

SHOULD BE ADDRESSED TO THE USA REPRESENTATIVE ON THE GRAPE STANDARDS PANEL, PETER GROSSER AT PHONE: 301-734-5786, FAX: 301-734-6799, OR E MAIL: pgrosser@aphis.usda.gov . IF YOU WOULD LIKE TO BE ADDED TO THE MAILING LIST FOR FUTURE MEETINGS ABOUT NAPPO, PLEASE CONTACT FPMS.

VIRUS (A VIRUS WHICH CAUSES PITTING AND GROOVING IN APPLE TREES) BY PHYLOGENETIC ANALYSIS OF REPLICASE AND COAT PROTEIN AMINO ACID SEQUENCES.

A REVERSE TRANSCRIPTASE-POLYMERASE CHAIN REACTION (PCR) ASSAY WAS DEVELOPED TO DETECT GRSPAV IN GRAPEVINES.

WHEN 62 RSP-POSITIVE GRAPEVINES (BASED ON FIELD INDEXING) WERE TESTED, ALL 62 VINES WERE POSITIVE BY PCR USING THREE DIFFERENT SETS OF PRIMERS (SEE TABLE ON NEXT PAGE). FORTY-THREE HEALTHY CONTROLS TESTED AT THE SAME TIME INCLUDED 23 *V. vinifera* SPECIES (NEGATIVE ON ST. GEORGE) AND 20 GRAPE PLANTS DERIVED FROM A SEEDLING POPULATION. ALL THE HEALTHY CONTROLS TESTED NEGATIVE BY PCR. WE HAVE ALSO TESTED 118 ST. GEORGE ROOTSTOCK VINES IN THE FPMS BLOCK BY PCR. OUR PRELIMINARY DATA SHOWED THAT 117 VINES TESTED POSITIVE BY PCR (SEE TABLE ON NEXT PAGE). CURRENTLY WE ARE INVESTIGATING THE VALIDITY OF OUR PAST BIOLOGICAL INDEX FOR RSP, IN WHICH WE WERE USING PROPAGATIONS FROM THE ABOVE MENTIONED ST. GEORGE ROOTSTOCKS AS INDICATOR PLANTS.

THE BROAD DISTRIBUTION OF RSP IN GRAPEVINES WORLDWIDE MAY BE PARTIALLY DUE TO WEAK SYMPTOM EXPRESSION IN MOST CULTIVARS, THE RELATIVELY RECENT DISCOVERY OF THE DISEASE, AND THE RELIANCE ON WOODY INDICATORS WITH A TWO-YEAR INCUBATION PERIOD. THE PCR-BASED DETECTION TECHNIQUE DESCRIBED HERE WILL GREATLY FACILITATE RAPID DETECTION OF GRSPAV IN FIELD-GROWN GRAPEVINES.

SEVERITY ASSOCIATED WITH EACH STRAIN, 3) DETERMINE THE CORRELATION BETWEEN ISOLATED VIRUS(ES) AND RSP, 4) DESIGN UNIVERSAL PRIMERS TO DETECT ALL STRAINS IN A

single reaction and specific primers for specific strains, and 5) test the validity of biological index

using St. George rootstock.

A comparison between PCR assay and biological index on RSP indicator St. George					
SAMPLE	NO. TESTED	RSP POS. by field INDEX	PCR POS.	% POS.	
Scion	62	62	62	100	
St. George 15	118	NOT TESTED SINCE 1981*	117	99	
Seedlings	20	NOT TESTED	0	0	
Scion	23	0	0	0	

*ONE VINE FROM THIS SELECTION TESTED NEGATIVE FOR RSP IN 1981

FPMS Web Site Now Online!!

FPMS is pleased to announce that customers can now access FPMS program information, collection lists and

ordering materials via its new site on the World Wide Web at <http://fpms.ucdavis.edu>. Also available for the first time is our new department E-mail address, fpms@ucdavis.edu, to which customers can direct inquiries by E-mail about FPMS programs, materials and services. E-mail inquiries will be directed to the staff member(s) best able to answer your questions. We hope these new resources will help to make our program information and staff more readily accessible and will encourage you to learn even more about FPMS.

Please visit our Web site and check it out for yourself! Any comments or questions regarding the site can be directed to webmaster Cheryl Covert at clcovert@ucdavis.edu or by phone



at (530) 752-3590.

FPMS Grapevine User Fee Program

Collection of calendar 1997 grapevine user fees is winding down, with most customers having reported and paid their 1997 fees. A second request for reports/payments went out on August 28, 1998 to those who had not yet submitted their payments and/or report forms. Customers are reminded that those who have not taken care of their 1997 user fee obligations by November 15th, the grape ordering deadline, will not be included in the initial round of allocations for available material this dormant season. Any questions or concerns regarding FPMS user fees can be directed to user fee program manager Cheryl Covert by phone at (530) 752-3590 or E-mail at clcovert@ucdavis.edu.

To address user fee compliance concerns, and because maximum compliance is essential to the financial health of the FPMS grape program, FPMS has been working to improve its communications and enforcement practices related to grape user fees. As the latest step in this process, FPMS has contracted with the CDFA Audit Office to conduct audits of FPMS customers for compliance with FPMS user fees concurrently with IAB nursery assessment audits. This year's experience was a good start, and CDFA auditors and FPMS will keep learning and fine tuning as the process continues next year.

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