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Worksheet 1. Contact and Methyl Bromide Request Information

The following information will be used to determine the amount of methyl bromide requested and the contact person for this request. It is important that we know whom to contact in case we need additional information during the review of the application.

1. **Location**
(Enter the state, region, or county. Provide more detail about the location if relevant to the feasibility of alternatives to methyl bromide.)

California

2. **Crop/commodity**
(Include all crops/commodities that benefit from the application of methyl bromide in a fumigation cycle. A fumigation cycle is the period of time between methyl bromide fumigations.)

Grapes (table and raisin)

3. **Climate**
(Individual users should enter their climate zone designation by reviewing the U.S. climate zone map. If a consortium is submitting this application, please indicate the estimated percentage of consortium users in each climate zone. This map is located at the end of this workbook or it can be reviewed online at http://www.usna.usda.gov/ Hardzone/ushzmap.html).

9a (50%), 9b(50%)

4. **Soil type** Check the box(es) for the soil types and percent organic matter that apply to your area. If a consortium is submitting this application, please indicate the estimated percentage of consortium users in each soil type.

Soil Type:	**Light** X	**Medium** _____	**Heavy** _____
Organic Matter:	**0 to 2%** X	**2 to 5 %** _____	**over 5%** _____

5. **Other geographic factors that may affect crop/commodity yield (e.g., water table).**

6. **Consortium name** California Grape and Tree Fruit League
7. **Contact name** Alexander J. Ott
8. **Address** 1540 E. Shaw Avenue, Suite 120
Fresno, CA 93710-8000
9. **Daytime phone** 559 226-6330
10. **FAX** 559 222-8326
11. **E-mail** Aott@cgtfl.com

Specialty (check one)
agronomic X
economic _____

List an additional contact person if available.

12. **Contact name** _____
13. **Address** _____
14. **Daytime phone** _____
15. **FAX** _____
16. **E-mail** _____

Specialty (check one)
agronomic _____
economic _____

Worksheet 1. Contact and Methyl Bromide Request Information

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17. How much active ingredient (ai) of methyl bromide are you requesting for 2005? 365,000 **lbs.**

If a consortium is submitting this application, the data for question 17 and 17a. should be the total for the consortium.

In the question below, area is defined as follows for each user: acres for growers, cubic feet for post harvest operations, and square feet for structural applications.

17a. How much area will this be applied to? Please list units. 1070 acres **units**

18. Are you requesting methyl bromide for additional years beyond 2005? **Yes** X **No** _____

18a. If yes, please list year and quantity active ingredient (ai) of methyl bromide requested in the table below and explain why you need authorization for multiple years.

Restrictions (township caps, rates, soil moisture, etc.) limit the effectiveness of existing alternatives. Methods of delivering alternatives in a manner that will enhance efficacy are not available on a commercial scale.

If a consortium is submitting this application, the data below should be the total for the consortium.

In the table below, **area is defined** as follows for each user: acres for growers, cubic feet for post harvest operations, and square feet for structural applications.

Year	Quantity ai (lb.) of Methyl Bromide	Area to be Treated	Unit of Area Treated
2006	365,000	1070	acres
2007	365,000	1070	acres

19. Target Pest(s) or Pest Problem(s):
(Be as specific as possible about the species or classes of pests relevant to the feasibility of alternatives.)

Root knot nematode (*Meloidogyne* spp.), Ring nematode (Criconemella xenoplax), Dagger nematodes (Xiphinema spp.), Root lesion nematode (Pratylenchus vulnus), Citrus nematode (Tylenchus semipenetrans). Replant Disorder (unknown disorder thought to result from a complex of major and minor soil-borne organisms).

20. If applying as a consortium for many users of methyl bromide, please define a *representative user*. Define exactly, issues such as size of the operation (acres treated with methyl bromide for growers, cubic feet for post-harvest operations, and square feet for structural applications), whether the representative user owns or rents the land or operation, intensity of methyl bromide use (treat regularly or only when pest reaches a threshold), pest pressure, etc.

Land is owned, managed operated by grower. Vineyard ranges from 120 - 300 acres, 40 - 60% of which are planted into grapes. Methyl bromide use is typical when replanting, which occurs once every 20 - 25 years.

20a. Explain why this user represents the typical user in the consortium.

As described in University of California Cooperative Extensioin's Sample Cost to Establish and Produce Table Grapes (1998) and Raisin Best Management Practices with Estimated Cost and Returns (1998).

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Worksheet 2-A. Methyl Bromide - Use 1997-2000

If a consortium is submitting this application, all data should reflect the **actual** data for the consortium.

Col A: Formulation of Methyl Bromide	Enter the appropriate data in Col B-M for each formulation, if known, and/or the totals and averages for all formulations. If you enter only the total and averages for all formulations in the last row of the table, please describe in the comments section the formulations typically used, or the approximate proportions of the formulations used.
Col B, E, H, K: Actual Area Treated	Enter the total actual area treated. Note: This number should be the total actual area treated by the individual user or total actual area for the entire consortium, for the year indicated.
Col C, F, I, L: Actual Total lbs. ai of Methyl Bromide Applied	Enter the actual total pounds active ingredient (ai) of methyl bromide applied. Note: This number should be the total pounds ai applied by the individual user or the entire consortium, for the year indicated.
Col D, G, J, M: Actual Average lbs. ai Applied per Area	The average application rates in pounds ai of methyl bromide per area are automatically calculated from the previous 2 columns.

Area is defined below as follows for each user: acres for growers, cubic feet for post-harvest operations, and square feet for structural applications.

A	B	C	D	E	F	G	H	I	J	K	L	M
Formulation of Methyl Bromide	**1997**			**1998**			**1999**			**2000**		
	Total Actual Area Treated	**Actual Total lbs. ai of Methyl Bromide Applied**	**Average lbs. ai Applied per Area**	**Total Actual Area Treated**	**Actual Total lbs. ai of Methyl Bromide Applied**	**Average lbs. ai Applied per Area**	**Total Actual Area Treated**	**Actual Total lbs. ai of Methyl Bromide Applied**	**Average lbs. ai Applied per Area**	**Total Actual Area Treated**	**Actual Total lbs. ai of Methyl Bromide Applied**	**Average lbs. ai Applied per Area**
over 95% methyl bromide	1800.49	579119.62	321.645563	780.09	273835.75	351.030971	620.85	238177.32	383.631022	673.6	155936.46	231.49712
75% methyl bromide, 25% chloropicrin												
67% methyl bromide, 33% chloropicrin												
50% methyl bromide, 50% chloropicrin												
__% methyl bromide, __% chloropicrin												
__% methyl bromide, __% chloropicrin												
All formulations of methyl bromide			321.645563			351.030971			383.631022			231.49712

Comments:

Source: California Pesticide Use Report

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Worksheet 2-B. Methyl Bromide - Crop/Commodity Yield and Gross Revenue 1997-2000

If a consortium is submitting this application, the data for this table should reflect the **actual averages** for the consortium.

The purpose of this worksheet is to estimate the gross revenue for 1997 - 2000 when using methyl bromide. Post-harvest and structural users may work with EPA to modify this form to accommodate differences in operations when providing gross revenue data.

Col. A: Year	Be sure to enter the year. Use as many rows as needed for each year for all the crops/commodities in the fumigation cycles from 1997 to 2000. If a fumigation cycle overlaps more than one calendar year, then the year of the fumigation cycle is the year methyl bromide was applied.
Col. B: Crop/Commodity	Enter all crops/commodities that benefit from methyl bromide in each fumigation cycle. (For example, if normally methyl bromide is applied and tomatoes are grown and harvested followed by peppers without an additional treatment of methyl bromide, then both tomatoes and peppers would be part of the same fumigation cycle.) See the Fumigation Cycle Worksheet for a comprehensive definition of the fumigation cycle. If someone other than the applicant benefits from the application of methyl bromide in the fumigation cycle and you do not have the quantitative data for the crops grown on the same land, please indicate so in the comments section below.
Col. C: Unit of Crop/Commodity	Enter the unit of measurement for each crop/commodity.
Col. D: Crop/Commodity Yield	Enter the number of units of crop/commodities produced per area.
Col. E: Price	Enter the average prices received by the users for the year and crop/commodity indicated (1997-2000).
Col. F: Revenue	This number is calculated automatically using the values you entered in Cols. D and E. You may override the formula to enter a different revenue. Please explain why the revenue amount is different in the comment section below.
Total Revenue for 1997-2000	Enter the total revenue per year by adding the revenue for all crops for that year.
Average Revenue per Year:	The average revenue per year is calculated automatically using the summary data you enter for each year.

Area is defined below as follows for each user: acres for growers, cubic feet for post-harvest operations, and square feet for structural applications.

A	B	C	D	E	F
Year Methyl Bromide was Applied	**Crop/Commodity**	**Unit of Crop/Commodity** (e.g., pounds, bushels)	**Crop/Commodity Yield** (Units per acre)	**Price** (per unit of crop/commodity)	**Revenue** (per acre)
1997	Table Grape	tons	1075	$ 448.00	$ 481,600.00
1998	Table Grape	tons	811	$ 499.00	$ 404,689.00
1999	Table Grape	tons	897	$ 552.00	$ 495,144.00
2000	Table Grape	tons	924	$ 565.00	$ 522,060.00
					$ 0.00
					$ 0.00
					$ 0.00
					$ 0.00
					$ 0.00
					$ 0.00
					$ 0.00
					$ 0.00
				Total Revenue for 1997	$ 481,600.00
				Total Revenue for 1998	$ 404,689.00
				Total Revenue for 1999	$ 495,144.00
				Total Revenue for 2000	$ 522,060.00
				Average Revenue Per Year	$ 475,873.25

Comments: **Source: NASS, CASS**

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Worksheet 2-B. Methyl Bromide - Crop/Commodity Yield and Gross Revenue 1997-2000

If a consortium is submitting this application, the data for this table should reflect the **actual averages** for the consortium.

The purpose of this worksheet is to estimate the gross revenue for 1997 - 2000 when using methyl bromide. Post-harvest and structural users may work with EPA to modify this form to accommodate differences in operations when providing gross revenue data.

Col. A: Year	Be sure to enter the year. Use as many rows as needed for each year for all the crops/commodities in the fumigation cycles from 1997 to 2000. If a fumigation cycle overlaps more than one calendar year, then the year of the fumigation cycle is the year me
Col. B: Crop/Commodity	Enter all crops/commodities that benefit from methyl bromide in each fumigation cycle. (For example, if normally methyl bromide is applied and tomatoes are grown and harvested followed by peppers without an additional treatment of methyl bromide, then bo If someone other than the applicant benefits from the application of methyl bromide in the fumigation cycle and you do not have the quantitative data for the crops grown on the same land, please indicate so in the comments section below.
Col. C: Unit of Crop/Commodity	Enter the unit of measurement for each crop/commodity.
Col. D: Crop/Commodity Yield	Enter the number of units of crop/commodities produced per area.
Col. E: Price	Enter the average prices received by the users for the year and crop/commodity indicated (1997-2000).
Col. F: Revenue	This number is calculated automatically using the values you entered in Cols. D and E. You may override the formula to enter a different revenue. Please explain why the revenue amount is different in the comment section below.
Total Revenue for 1997-2000	Enter the total revenue per year by adding the revenue for all crops for that year.
Average Revenue per Year:	The average revenue per year is calculated automatically using the summary data you enter for each year.

Area is defined below as follows for each user: acres for growers, cubic feet for post-harvest operations, and square feet for structural applications.

A	B	C	D	E	F
Year Methyl Bromide was Applied	**Crop/Commodity**	**Unit of Crop/Commodity** (e.g., pounds, bushels)	**Crop/Commodity Yield** (Units per area)	**Price** (per unit of crop/commodity)	**Revenue** (per area)
1997	Raisin Grape	Tons	1.16	$ 262.00	$ 305.00
1998	Raisin Grape	Tons	1.6	$ 290.00	$ 465.00
1999	Raisin Grape	Tons	1.03	$ 321.00	$ 330.00
2000	Raisin Grape	Tons	1.28	$ 157.00	$ 200.00
					$ 0.00
					$ 0.00
					$ 0.00
					$ 0.00
					$ 0.00
					$ 0.00
					$ 0.00
					$ 0.00
				Total Revenue for 1997	$ 305.00
				Total Revenue for 1998	$ 465.00
				Total Revenue for 1999	$ 330.00
				Total Revenue for 2000	$ 206.00
				Average Revenue Per Year	$326.50

Comments: **Source: DFA, CASS**

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Worksheet 2-C. Methyl Bromide - Crop/Commodity Yield and Gross Revenue 2001

If a consortium is submitting this application, the data for this table should reflect the **representative user** for the consortium.

The purpose of this worksheet is to estimate the gross revenue for 2001when using methyl bromide. Post-harvest users may modify this form to accommodate differences when providing gross revenue data. If 2001 was not a typical year for the individual or for the representative user of a consortium, the applicant may provide additional data for a different year. However, all applicants must complete this worksheet for the year 2001 regardless. Please explain in the comment section at the bottom of the worksheet why 2001 is not considered a typical year, if that is the case.

Col. A: Crop/Commodity	Enter all crops/commodities that benefit from methyl bromide in the fumigation cycle (interval between fumigations) beginning with the treatment of methyl bromide in 2001. If multiple crops are grown during the interval between fumigations (e.g. tomatoes followed by peppers in a single growing season, or strawberries followed by lettuce over 2 or 3 years) include all of the crops during the entire interval. See the Fumigation Cycle Worksheet for a comprehensive definition of the fumigation cycle. If someone other than the applicant benefits from the application of methyl bromide in the fumigation cycle and you do not have the quantitative data for the crops grown on the same land, please indicate so in the comments section below.
Col. B: Price Factors	Enter factors that determine prices (e.g., grade, time, market). If you received different prices for your crop/commodity as a result of quality, grade, market (e.g. fresh or processing), timing of harvest, etc., you may itemize by using more than one row. Itemize or aggregate these factors to the extent appropriate in making the case that the use of methyl bromide affects these price factors.
Col. C: Unit of Crop/Commodity	Enter the unit of measurement for each crop/commodity.
Col. D: Crop/Commodity Yield	Enter the number of units of crop/commodity produced per area for that price factor.
Col. E: Price	Enter average 2001 prices received by the users for that crop/commodity and price factor.
Col. F: Revenue	Revenue is automatically calculated using the data you entered for yield and price. If revenue is not equal to yield times price, you may override the formula and enter a different revenue amount. Please explain why this revenue amount is different in the comment section below.

Area is defined below as follows for each user: acres for growers, cubic feet for post-harvest operations, and square feet for structural applications.

A	B	C	D	E	F
Crop/Commodity	**Price Factors** (grade, time, market)	**Unit of Crop/Commodity** (e.g., pounds, bushels)	**Crop/Commodity Yield** (Units per area)	**Price** (per unit of crop/commodity)	**Revenue** (per area)
Table Grape		Tons	8.48	$ 640.00	$ 5,427.20
					$ 0.00
					$ 0.00
					$ 0.00
					$ 0.00
					$ 0.00
					$ 0.00
					$ 0.00
					$ 0.00
					$ 0.00
					$ 0.00
					$ 0.00
				Total Revenue	$ 5,427.20

Comments: Source - NASS est.
Please note that that the fumigation cycle for replants is 22 years. Vines do not produce a marketable crop unti year 3 or 4.
These figures represent average bearing revenue.

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Worksheet 2-C. Methyl Bromide - Crop/Commodity Yield and Gross Revenue 2001

If a consortium is submitting this application, the data for this table should reflect the **representative user** for the consortium.

The purpose of this worksheet is to estimate the gross revenue for 2001when using methyl bromide. Post-harvest users may modify this form to accommodate differences when providing gross revenue data. If 2001 was not a typical year for the individual or f

Col. A: Crop/Commodity	Enter all crops/commodities that benefit from methyl bromide in the fumigation cycle (interval between fumigations) beginning with the treatment of methyl bromide in 2001. If multiple crops are grown during the interval between fumigations (e.g. tomatoes If someone other than the applicant benefits from the application of methyl bromide in the fumigation cycle and you do not have the quantitative data for the crops grown on the same land, please indicate so in the comments section below.
Col. B: Price Factors	Enter factors that determine prices (e.g., grade, time, market). If you received different prices for your crop/commodity as a result of quality, grade, market (e.g. fresh or processing), timing of harvest, etc., you may itemize by using more than one ro
Col. C: Unit of Crop/Commodity	Enter the unit of measurement for each crop/commodity.
Col. D: Crop/Commodity Yield	Enter the number of units of crop/commodity produced per area for that price factor.
Col. E: Price	Enter average 2001 prices received by the users for that crop/commodity and price factor.
Col. F: Revenue	Revenue is automatically calculated using the data you entered for yield and price. If revenue is not equal to yield times price, you may override the formula and enter a different revenue amount. Please explain why this revenue amount is different in t

Area is defined below as follows for each user: acres for growers, cubic feet for post-harvest operations, and square feet for structural applications.

A	B	C	D	E	F
Crop/Commodity	**Price Factors** (grade, time, market)	**Unit of Crop/Commodity** (e.g., pounds, bushels)	**Crop/Commodity Yield** (Units per area)	**Price** (per unit of crop/commodity)	**Revenue** (per area)
Raisin Grape		Tons	1.18	$ 179.00	$ 325.00
					$ 0.00
					$ 0.00
					$ 0.00
					$ 0.00
					$ 0.00
					$ 0.00
					$ 0.00
					$ 0.00
					$ 0.00
					$ 0.00
					$ 0.00
				Total Revenue	$ 325.00

Comments: Source - NASS est.
Please note that that the fumigation cycle for replants is 22 years. Vines do not produce a marketable crop unti year 3 or 4.
These figures represent average bearing revenue.

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Worksheet 2-D. Methyl Bromide - Use and Costs for 2001

If a consortium is submitting this application, the data in Cols. B, C, D, and E should reflect the *representative user* in the consortium. The data in Col. F should reflect the **actual** area treated by all users in the consortium.

If the methyl bromide is custom applied then put the cost per area in Column G and fill in the average lb ai of methyl bromide applied per area (Col B) and the Total Actual Area Treated (Col F).

If 2001 was not a typical year for the individual or for the representative user of a consortium, the applicant may provide additional data for a different year. However, all applicants must complete this worksheet for the year 2001 regardless. If you provide an additional year's data, please explain in the comment section at the bottom of the worksheet why 2001 is not considered a typical year.

Col. A: Formulation of Methyl Bromide	Enter the appropriate data in Col B-G for each formulation, if known, and/or the totals and averages for all formulations of methyl bromide. If you just enter data in the bottom row in the table (All formulations of methyl bromide), please describe in the comments, the relative usage of the various formulations, to the extent known.
Col B: Average lbs. active ingredient (ai) of Methyl Bromide Applied per Area	Enter the average pounds active ingredient (ai) of methyl bromide applied per area.
Cols. C, D, E, G: Prices and Costs	Enter the average price per pound active ingredient (ai) of methyl bromide in Col. C and the average cost of applying methyl bromide per area treated in Col. D. In Col. E, enter the average other costs per area associated with applying methyl bromide (e.g., tarps). Column G will be calculated automatically using the values you entered in columns B-E. If methyl bromide is custom applied, enter the cost per area in Col. G and fill in Cols. B and F.
Col. F: Actual Area Treated	Enter the **actual** area treated. Note: This number should be the total area treated by all users in the consortium.

Area is defined below as follows for each user: acres for growers, cubic feet for post-harvest operations, and square feet for structural applications.

A	B	C	D	E	F	G
Formulation of Methyl Bromide	**Lb. ai of Methyl Bromide Applied per Area (2001 Average)**	**Price per lb. ai of Methyl Bromide (2001 Average)**	**Cost of Applying Pesticide per Area (2001 Average)**	**Other MBr Costs (e.g. tarps, etc.) per Area (2001 Average)**	**Total Actual Area Treated in the Consortium**	**Cost per Area**
over 95% methyl bromide	400	$ 4.00	$ 200.00			$ 1,800.00
75% methyl bromide, 25% chloropicrin						$ 0.00
67% methyl bromide, 33% chloropicrin						$ 0.00
50% methyl bromide, 50% chloropicrin						$ 0.00
__% methyl bromide, __% chloropicrin						$ 0.00
__% methyl bromide, __% chloropicrin						$ 0.00
						$ 0.00
All formulations of methyl bromide						$ 1,800.00

Comments:

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Worksheet 2-E. Methyl Bromide - *Other* Operating Costs for 2001

Do not include methyl bromide costs.

If a consortium is submitting this application, the data for this table should reflect a **representative user**.

Enter all operating costs except methyl bromide costs incurred during the fumigation cycle (interval between fumigations) beginning in 2001. See the Fumigation Cycle Worksheet for a comprehensive definition of the fumigation cycle. Enter these costs in Col B for custom operations, **or** in Col C and D for operations done by user.

Submit crop budgets for each crop, if available. You may submit crop budgets electronically or in hard copy. If your costs are significantly different than the crop budgets, please explain in the comments.

Col A: Operation	Identify in Col A the operations (except methyl bromide) to which the costs apply. For growers, these operations should include but are not limited to (1) prepare soil, (2) fertilize, (3) irrigate, (4) plant, (5) harvest, (6) other pest controls, etc. You must include all other operating costs.
Col B: Custom Operation Cost	If you incur custom operation costs, enter those costs in Col. B.
Col C: Material Cost per Area	If you do not incur custom operation costs, enter the material cost per area.
Col D: Labor Cost per Area	If you do not incur custom operation costs, enter the labor cost per area.
Col E: Total Cost per Area	The total cost per area is calculated automatically from the values you enter in Cols. C and D.
Col F: Typical Equipment Used	Identify the typical equipment used for operations done by user. Please be specific, such as tractor horsepower. No cost data is required in this column.

Area is defined below as follows for each user: acres for growers, cubic feet for post-harvest operations, and square feet for structural applications.

A	B	C	D	E	F
Operation	**Custom Operation Cost per Area**	**Operation Done by User**			
		Material Cost per Area	**Labor Cost per Area**	**Total Cost per Area**	**Typical Equipment Used**
Planting		$ 1,362.00	$ 520.00	$ 1,882.00	
Cultural costs			$ 246.00	$ 246.00	
				$ 0.00	
				$ 0.00	
				$ 0.00	
				$ 0.00	
				$ 0.00	
				$ 0.00	
				$ 0.00	
				$ 0.00	
				$ 0.00	
				$ 0.00	
				$ 0.00	
Total Custom per Area	$ 0.00		**User Total per area**	$ 2,128.00	

NOTE: First year costs only, NOT for entire fumigation cycle.

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Worksheet 2-F. Methyl Bromide Fixed and Overhead Costs in 2001

If a consortium is submitting this application, the data for this table should reflect a **representative user.**

Enter **all** fixed and overhead costs incurred during the fumigation cycle (interval between fumigations) beginning in 2001. See the Fumigation Cycle Worksheet for a comprehensive definition of the fumigation cycle.

Col A: Cost Item	Identify in Col. A the cost items. These items should include, but are not limited to: (1) land rent, (2) interest, (3) depreciation, (4) management, and (5) overhead such as office and administration.)
Col B: Description	Please describe the cost in more detail.
Col C: Allocation Method	Please describe how you estimated the portion of total fixed cost of the farm or entity that applies to this crop/commodity.
Col D: Cost per Area	Enter the cost per area of methyl bromide treated.

Area is defined below as follows for each user: acres for growers, cubic feet for post-harvest operations, and square feet for structural applications.

A	B	C	D
Cost Item	**Description**	**Allocation Method**	**Cost per Area**
Interest	Operating Capital	10%	$131.00
Overhead costs	Office, insurance, taxes, repairs	Actual costs	$161.00
Noncash overhead	Land, Irrigation system, shop, equipment	Capital recovery costs	$512.00
		Total	$804.00

Comments: First year costs for replanting raisin and table grapes, NOT for entire fumigation cycle.

Source: Table Grapes 1998 Sample Costs to Establish a Vineyard and Produce Table Grapes. University of California Cooperative Extension

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Worksheet 3-A. Alternatives - Technical Feasibility of Alternatives to Methyl Bromide

In this worksheet, you should address why an alternative pest management strategy on the list (see previous page) is or is not effective for your conditions. This worksheet contains 9 questions. You must complete one copy of worksheet 3-A for each resear

For worksheet 3-A you must complete one worksheet for each alternative, for each research study addressed. Please number the worksheets as follows. For the same alternative, first research study, label the worksheet 3-A(1)(a). For the same alternative,

When completing Section II, if you cite a study that is on the EPA website, you only need to complete questions 1, 5, and 8.

Summarize each of the research studies you cite in the Research Summary Worksheet.

If you prefer, you may provide the information requested in this worksheet in a narrative review of one or more relevant research reports. The narrative review must reply to Section I and questions 1 through 8 in Section II. A Research Summary Worksheet

BACKGROUND

EPA must consider whether alternative pest control measures (pesticide and non-pesticidal, and their combination) could be used successfully instead of methyl bromide by crop and circumstance (geographic area.) The Agency has developed a list of possible

There are three major ways you can provide the Agency with proof of your investigative work.
(1) Conduct and submit your own research
(2) Cite research that has been conducted by others
(3) Cite research listed on the EPA website

Whether you conduct the research yourself or cite studies developed by others, it is important that the studies be conducted in a scientifically sound manner. The studies should include a description of the experimental methodology used, such as applicati

The Agency has posted many research studies on a variety of crops on its website and knows of more studies currently in progress. EPA will add studies to its website as they become publicly available. You are encouraged to review the EPA website and othe

In addition, EPA acknowledges that, for certain circumstances, some alternatives are not technically feasible and therefore no research has been conducted (i.e. solarization may not be feasible in Seattle). You should look at the list of alternatives pro

Use additional pages as needed.

Alternative: 1,3-D **Study:** The Replant Problem and Its Management

Section I. Initial Screening on Technical Feasibility of Alternatives

1. Are there any location-specific restrictions that inhibit the use of this alternative on your site?

1a. Full use permitted _____
1b. Township caps X
1c. Alternative not acceptable in consuming country _____
1d. Other (Please describe) _____

_____
_____
_____
_____

If use of this alternative is precluded by regulatory restriction for all users covered by this application, the applicant should not complete Section II.

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Section II. Existing Research Studies on Alternatives to Methyl Bromide

1. Is the study on EPA's website? **Yes** _____ **No** Can be found at www.uckac.edu/nematode/

1a. If not on the EPA website, please attach a copy.

2. Author(s) or researcher(s) Michael V. McKenry, Ph.D.

3. Publication and Date of Publication The Replant Problem and Its Management; July 1999

4. Location of research study California

5. Name of alternative(s) in study. If more than one alternative, list the ones you wish to discuss.

1,3-D

6. Was crop yield measured in the study? **Yes** _____ **No** X

7. Describe the effectiveness of the alternative in controlling pests in the study.

Lowest rate for success is 40 GPA; application to dry soil is key to reducing use rate, but this is in conflict with regulations. Highest use rate allowed is 35 GPA, which is too low when applied to soils with high moisture content as required by regulations. These restrictions limit effective use of 1,3-D to coarser textured soils.

8. Discuss how the results of the study apply to your situation. Would you expect similar results? Are there other factors that would affect your adoption of this tool?

Township caps and other use restrictions (rate and high soil moisture content requirements) limits the widespread use and long lasting benefits of 1,3-D. Most growers will have to rent sprinkler pipe to obtain proper soil moisture.

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Worksheet 3-A. Alternatives - Technical Feasibility of Alternatives to Methyl Bromide

In this worksheet, you should address why an alternative pest management strategy on the list (see previous page) is or is not effective for your conditions. This worksheet contains 9 questions. You must complete one copy of worksheet 3-A for each research study you use to evaluate a single methyl bromide alternative. Use additional pages as need.

For worksheet 3-A you must complete one worksheet for each alternative, for each research study addressed. Please number the worksheets as follows. For the same alternative, first research study, label the worksheet 3-A(1)(a). For the same alternative, second research study, label the worksheet 3-A(1)(b). For the first alternative, third research study, label the worksheet 3-A(1)(c). For the second alternative, first research study, label the worksheet 3-(A)(2)(a). For the second alternative, second research study, label the worksheet 3-(A)(2)(b).

When completing Section II, if you cite a study that is on the EPA website, you only need to complete questions 1, 5, and 8.

Summarize each of the research studies you cite in the Research Summary Worksheet.

If you prefer, you may provide the information requested in this worksheet in a narrative review of one or more relevant research reports. The narrative review must reply to Section I and questions 1 through 8 in Section II. A Research Summary Worksheet of relevant treatments should be provided for each study reviewed.

BACKGROUND

EPA must consider whether alternative pest control measures (pesticide and non-pesticidal, and their combination) could be used successfully instead of methyl bromide by crop and circumstance (geographic area.) The Agency has developed a list of possible alternative pest control regimens for various crops, which can be found at http://www.epa.gov/ozone/mbr or by calling 1-800-296-1996.

There are three major ways you can provide the Agency with proof of your investigative work.
(1) Conduct and submit your own research
(2) Cite research that has been conducted by others
(3) Cite research listed on the EPA website

Whether you conduct the research yourself or cite studies developed by others, it is important that the studies be conducted in a scientifically sound manner. The studies should include a description of the experimental methodology used, such as application rates, application intervals, pest pressure, weather conditions, varieties of the crop used, etc. All results should be included, regardless of outcome. **You must submit copies of each study to EPA** unless they are listed on the Agency website.

The Agency has posted many research studies on a variety of crops on its website and knows of more studies currently in progress. EPA will add studies to its website as they become publicly available. You are encouraged to review the EPA website and other websites for studies that pertain to your crop and geographic area.

In addition, EPA acknowledges that, for certain circumstances, some alternatives are not technically feasible and therefore no research has been conducted (i.e. solarization may not be feasible in Seattle). You should look at the list of alternatives provided by the Agency and explain why they cannot be used for your crop and in your geographic area.

Use additional pages as needed.

Alternative: 1,3-D, Chloropicrin **Study:** The Replant Problem and Its Management

Section I. Initial Screening on Technical Feasibility of Alternatives

1. Are there any location-specific restrictions that inhibit the use of this alternative on your site?

1a. Full use permitted _____
1b. Township caps X
1c. Alternative not acceptable in consuming country _____
1d. Other (Please describe) _____

_____
_____
_____
_____

If use of this alternative is precluded by regulatory restriction for all users covered by this application, the applicant should not complete Section II.

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ID# _____

Section II. Existing Research Studies on Alternatives to Methyl Bromide

1. Is the study on EPA's website? **Yes** _____ **No** Can be found at www.uckac.edu/nematode/

1a. If not on the EPA website, please attach a copy.

2. Author(s) or researcher(s) Michael V. McKenry

3. Publication and Date of Publication The Replant Problem and Its Management; July 1999

4. Location of research study California

5. Name of alternative(s) in study. If more than one alternative, list the ones you wish to discuss.
1,3-D, Chloropicrin (Telone C17, Telone C35)

6. Was crop yield measured in the study? **Yes** _____ **No** x

7. Describe the effectiveness of the alternative in controlling pests in the study.
Premix formulations of 1,3-D and Chloropicrin are effective only when treatment rates of 1,3-D are at the maximum (35 GPA) as described in Worksheet 3-A. The addition of chloropicrin does not appear to provide additional nematode control.

8. Discuss how the results of the study apply to your situation. Would you expect similar results? Are there other factors that would affect your adoption of this tool?

See Worksheet 3-A. Removing use restrictions (remove township caps, increase use rates and remove soil moisture requirement) would increase the adoption of this alternative.

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Worksheet 3-A. Alternatives - Technical Feasibility of Alternatives to Methyl Bromide

In this worksheet, you should address why an alternative pest management strategy on the list (see previous page) is or is not effective for your conditions. This worksheet contains 9 questions. You must complete one copy of worksheet 3-A for each resear

For worksheet 3-A you must complete one worksheet for each alternative, for each research study addressed. Please number the worksheets as follows. For the same alternative, first research study, label the worksheet 3-A(1)(a). For the same alternative,

When completing Section II, if you cite a study that is on the EPA website, you only need to complete questions 1, 5, and 8.

Summarize each of the research studies you cite in the Research Summary Worksheet.

If you prefer, you may provide the information requested in this worksheet in a narrative review of one or more relevant research reports. The narrative review must reply to Section I and questions 1 through 8 in Section II. A Research Summary Worksheet

BACKGROUND

EPA must consider whether alternative pest control measures (pesticide and non-pesticidal, and their combination) could be used successfully instead of methyl bromide by crop and circumstance (geographic area.) The Agency has developed a list of possible

There are three major ways you can provide the Agency with proof of your investigative work.
(1) Conduct and submit your own research
(2) Cite research that has been conducted by others
(3) Cite research listed on the EPA website

Whether you conduct the research yourself or cite studies developed by others, it is important that the studies be conducted in a scientifically sound manner. The studies should include a description of the experimental methodology used, such as applicati

The Agency has posted many research studies on a variety of crops on its website and knows of more studies currently in progress. EPA will add studies to its website as they become publicly available. You are encouraged to review the EPA website and othe

In addition, EPA acknowledges that, for certain circumstances, some alternatives are not technically feasible and therefore no research has been conducted (i.e. solarization may not be feasible in Seattle). You should look at the list of alternatives pro

Use additional pages as needed.

Alternative: 1,3 -D, Metam Sodium **Study:** The Replant Problem and Its Management

Section I. Initial Screening on Technical Feasibility of Alternatives

1. Are there any location-specific restrictions that inhibit the use of this alternative on your site?

1a. Full use permitted _____
1b. Township caps X
1c. Alternative not acceptable in consuming country _____
1d. Other (Please describe) _____

_____
_____
_____
_____

If use of this alternative is precluded by regulatory restriction for all users covered by this application, the applicant should not complete Section II.

For EPA Use Only
ID# _____

Section II. Existing Research Studies on Alternatives to Methyl Bromide

1. Is the study on EPA's website? **Yes** _____ **No** Can be found at www.uckac.edu/nematode/

1a. If not on the EPA website, please attach a copy.

2. Author(s) or researcher(s) Michael V. McKenry
Also - S. Schneider, H. Ajwa, T. Trout, J. Sims, "Grape Replant Disorder - Field Tests of Some Potential Alternatives"

3. Publication and Date of Publication The Replant Problem and Its Management; July 1999

4. Location of research study California

5. Name of alternative(s) in study. If more than one alternative, list the ones you wish to discuss.

1,3-D, metam sodium

6. Was crop yield measured in the study? **Yes** _____ **No** x

7. Describe the effectiveness of the alternative in controlling pests in the study.

1,3-D (shanked or drenched) at 35 GPA followed by a sprinkler application of metam sodium at a rate of 250 ppm has been shown to be as effective as methyl bromide (tarped), as has applications of 1,3-D through buried drip tape followed by applying metam sodium through microsprinkler.

8. Discuss how the results of the study apply to your situation. Would you expect similar results? Are there other factors that would affect your adoption of this tool?

Having sprinkler lines in place during 1,3-D application is necessary for subsequent metam sodium application. Amount of water used during sprinkler application depends on soil texture. Growers are not typically set up to make sprinkler applications of metam sodium, requiring purchase or lease of equipment.

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Worksheet 3-A. Alternatives - Technical Feasibility of Alternatives to Methyl Bromide

In this worksheet, you should address why an alternative pest management strategy on the list (see previous page) is or is not effective for your conditions. This worksheet contains 9 questions. You must complete one copy of worksheet 3-A for each resear

For worksheet 3-A you must complete one worksheet for each alternative, for each research study addressed. Please number the worksheets as follows. For the same alternative, first research study, label the worksheet 3-A(1)(a). For the same alternative,

When completing Section II, if you cite a study that is on the EPA website, you only need to complete questions 1, 5, and 8.

Summarize each of the research studies you cite in the Research Summary Worksheet.

If you prefer, you may provide the information requested in this worksheet in a narrative review of one or more relevant research reports. The narrative review must reply to Section I and questions 1 through 8 in Section II. A Research Summary Worksheet

BACKGROUND

EPA must consider whether alternative pest control measures (pesticide and non-pesticidal, and their combination) could be used successfully instead of methyl bromide by crop and circumstance (geographic area.) The Agency has developed a list of possible

There are three major ways you can provide the Agency with proof of your investigative work.
(1) Conduct and submit your own research
(2) Cite research that has been conducted by others
(3) Cite research listed on the EPA website

Whether you conduct the research yourself or cite studies developed by others, it is important that the studies be conducted in a scientifically sound manner. The studies should include a description of the experimental methodology used, such as applicati

The Agency has posted many research studies on a variety of crops on its website and knows of more studies currently in progress. EPA will add studies to its website as they become publicly available. You are encouraged to review the EPA website and othe

In addition, EPA acknowledges that, for certain circumstances, some alternatives are not technically feasible and therefore no research has been conducted (i.e. solarization may not be feasible in Seattle). You should look at the list of alternatives pro

Use additional pages as needed.

Alternative: Metam Sodium **Study:** The Replant Problem and Its Management

Section I. Initial Screening on Technical Feasibility of Alternatives

1. Are there any location-specific restrictions that inhibit the use of this alternative on your site?

1a. Full use permitted _____

1b. Township caps _____

1c. Alternative not acceptable in consuming country _____

1d. Other (Please describe) _____

_____

_____

_____

_____

If use of this alternative is precluded by regulatory restriction for all users covered by this application, the applicant should not complete Section II.

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Section II. Existing Research Studies on Alternatives to Methyl Bromide

1. Is the study on EPA's website? **Yes** _____ **No** Can be found at www.uckac.edu/nematode/

1a. If not on the EPA website, please attach a copy.

2. Author(s) or researcher(s) Michael V. McKenry

3. Publication and Date of Publication The Replant Problem and Its Management; July 1999

4. Location of research study California

5. Name of alternative(s) in study. If more than one alternative, list the ones you wish to discuss.

Metam Sodium

6. Was crop yield measured in the study? **Yes** _____ **No** X

7. Describe the effectiveness of the alternative in controlling pests in the study.

Metam sodium performs erratically and inconsistently due to its poor fumigant attributes. It does kill shallow roots at 250 ppm by drenching. Metam sodium can be as effective as methyl bromide when applied at twice the label rate, which is not legal. New delivery systems are being investigated to deliver metam sodium through soil in water, but availability is limited.

8. Discuss how the results of the study apply to your situation. Would you expect similar results? Are there other factors that would affect your adoption of this tool?

Erratic results and difficulty of obtaining good distribution in soil is a limiting factor. Availability of economical and commercial equipment that can distribute the material through the soil must occur for widespread adoption of metam sodium.

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Worksheet 3-B. Alternatives - Pest Control Regimen Costs for Alternative: Not Available

If a consortium is submitting this application, the data for this table should reflect a **representative user.**

Col. A: Name of Product and Non-chemical Control	Enter all alternatives and non-chemical pest control that would replace one treatment of methyl bromide throughout the fumigation cycle. See the Fumigation Cycle Worksheet for a comprehensive definition of the fumigation cycle. If multiple crops are grown during the interval between fumigations (e.g. tomatoes followed by peppers in a single growing season, or strawberries followed by lettuce over 2 or 3 years) include all of the pesticides that replace methyl bromide for the entire interval. Do not include pesticides that are used along with methyl bromide--enter only the additional pest control if methyl bromide were not available. If someone other than the applicant previously benefited from the application of methyl bromide in the fumigation cycle and you do not have the quantitative data for the crops grown on the same land, please indicate so in the comments section below.
Col. B: Target Pests	Be as specific as possible regarding the species or classes of pests controlled by the active ingredient or pesticide product.
Col. C: Active Ingredients	Use one row for each active ingredient (ai). For example, if a product contains 2 ai's use 2 rows for that product. Once a row is completed for a given product, then only Col. B (if applicable), C, and E need to be completed for additional rows regarding the same product.
Col. D: Formulation	Enter the formulation or the % of active ingredient.
Col. E, F, G: Application Rate	As a cross check, EPA is requesting both the amount of active ingredient in Col. E and product applied per area in Col. F. Indicate the unit of the product in Col. G.
Col. H, I, J: Prices and Costs	**Use 2001 prices and costs.** If the product is custom applied you may enter the total cost in the last column (Col. M) and override the formula. If a pesticide is applied by the user, enter the price of the product in Col. H and the cost of applying it in Col. I. Enter any other costs associated with **applying** this product in Col. J, specifying what they are in the comments section at the bottom of this sheet.
Col. K: Area Treated	Enter the area receiving at least one application of the pesticide.
Col. L: # of Applications per Year	Enter the number of applications in a fumigation cycle comparable to methyl bromide for this alternative pest control regimen. Since this number is an average, it does not need to be a whole number.
Col. M: Cost per Area in 2001 Dollars	Enter the cost per area in 2001 dollars. Col. M will be calculated automatically using the data you have entered for a chemical pest control, or, the formula in Col. M can be overridden if the cost per area is known because the product was custom applied.
Non-chemical Control	Enter data near the bottom of the form. Identify the control in Col. A. Enter the target pests in Col. B. Describe the non-chemical pest control Col. B-L. Enter the costs in Col. M in 2001 dollars.

Area is defined below as follows for each user: acres for growers, cubic feet for post-harvest operations, and square feet for structural applications.

A	B	C	D	E	F	G	H	I	J	K	L	M
Name of Product	**Target Pests**	**Active Ingredients (ai) in Product**	**Formulation of Product**	**Application Rate**			**Price per Unit of the Product**	**Cost of Applying Pesticide per Area**	**Other Costs per Application**	**Area Treated at Least Once**	**# of Applications per Year**	**Cost per Area (2001$)**
				lbs. ai per Area per Application	**Units of product per Area per Application**	**Product Unit (e.g., lbs., gals)**						
												$ 0.00
												$ 0.00
												$ 0.00
												$ 0.00
												$ 0.00
												$ 0.00
												$ 0.00
												$ 0.00
												$ 0.00
												$ 0.00
												$ 0.00
												$ 0.00
Non-Chemical Pest Control	**Target Pests**	**Description**										**Cost/area**
											Total	$ 0.00

Comments:
Data not available at this time.

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Worksheet 3-C. Alternatives - Crop/Commodity Yield and Gross Revenue for Alternativ

Unknown (see comments)

If a consortium is submitting this application, the data for this table should reflect a *representative* user.

The purpose of this worksheet is to identify the gross revenue for units (crop, commodity, structure) when using an alternative compared to gross revenue when using methyl bromide. Post-harvest and structural users may modify this form to accommodate differences in operations when providing gross revenue data.

Col. A: Crop/Commodity	Enter all crops/commodities that can be grown/treated during the same interval of time comprising a methyl bromide fumigation cycle. Please discuss changes in crop cycles resulting from alternative use in the comments. See the Fumigation Cycle Worksheet for a comprehensive definition of the fumigation cycle. If someone other than the applicant benefits from the application of methyl bromide in the fumigation cycle and you do not have the quantitative data for the crops grown on the same land, please indicate so in the comments section below.
Col. B: Price Factors	Enter in Col. B any factors that determine prices (e.g., grade, time, market). If you received different prices for your crop/commodity as a result of quality, grade, market (e.g., fresh or processing), timing of harvest, etc., you may itemize by using more than one row. Itemize or aggregate these factors to the extent appropriate in making the case that the use of alternatives affects these price factors.
Col. C: Unit of Crop/Commodity	Enter the unit of measurement for your crop/commodity.
Col. D: Crop/Commodity Yield	Enter the number of units of crop/commodity produced per area for that price factor identified.
Col. E: Price	Enter the average 2001 prices received by the users for that crop/commodity and price factor.
Col. F: Gross Revenue	In the electronic version, revenue is automatically calculated below using the data you entered for yield and price. If revenue is not equal to yield times price, you may override the formula and enter a different revenue amount. Please explain why this revenue amount is different in the comment section

Area is defined below as follows for each user: acres for growers, cubic feet for post-harvest operations, and square feet for structural applications.

A	B	C	D	E	F
Crop/Commodity	**Price Factors** (grade, time, market)	**Unit of Crop/Commodity** (e.g., pounds, bushels)	**Crop/Commodity Yield** (Units per area)	**Price** (per unit of crop/commodity)	**Revenue** (per area)
					$ 0.00
					$ 0.00
					$ 0.00
					$ 0.00
					$ 0.00
					$ 0.00
					$ 0.00
					$ 0.00
					$ 0.00
					$ 0.00
					$ 0.00
					$ 0.00
					$ 0.00
				Total Revenue	$ 0.00

Comments:

Exact numbers are unknown, largely due to the long fumigation cycle (20 -25 years) and the difficulty to quantify over that period of time
It is estimated that use of alternatives will result in a 25% loss in production efficiency at this time (M. McKenry, The Replant Problem and Its Management

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Worksheet 3-D. Alternatives - Changes in Other Costs for Alternative: Not available

If a consortium is submitting this application, the data for this table should reflect a *representative user*.

Enter data only for costs (other than the cost of alternative pest control) that change as a result of using the alternatives instead of methyl bromide. Enter the whole cost, not just the incremental changes. Enter the cost in Col. B for custom operation costs, **or** in Col. C and D for operations done by user.

Col. A: Operation or Cost Item	Identify the operations or cost items that change as a result of not using methyl bromide.
Col. B: Custom Operation Cost	Enter custom operation costs that change in Col. B.
Col. C, D, E: Costs per Area	Enter in Col. C and D, material and labor costs per area that change for operations done by user. The total cost per area is calculated automatically from the values you enter in Cols. C and D.
Col. F: Typical Equipment Used	Identify changes in the typical equipment used by the user as a result of not using methyl bromide. Please be specific such as tractor horsepower. No cost data are required in this column.

Area is defined below as follows for each user: acres for growers, cubic feet for post-harvest operations, and square feet for structural applications.

A	B	C	D	E	F
Operation or Cost Item	**Custom Operation Cost per Area**	**Operation Done by User**			**Typical Equipment Used**
		Material Cost per Area	**Labor Cost per Area**	**Total Cost per Area**	
				$ 0.00	
				$ 0.00	
				$ 0.00	
				$ 0.00	
				$ 0.00	
				$ 0.00	
				$ 0.00	
				$ 0.00	
				$ 0.00	
				$ 0.00	
				$ 0.00	
				$ 0.00	
				$ 0.00	
Total Custom per Area	$ 0.00		**User Total per area**	$ 0.00	

Comments:
Not known at this time.

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Worksheet 4. Alternatives - Future Research Plans

Please describe future plans to test alternatives to methyl bromide. (All available methyl bromide alternatives from the alternatives list should have been tested or have future tests planned.) There is no need to complete a separate worksheet for future research plans for each alternative - you may use this worksheet to describe all future research plans.

1. **Name of study:** See Below

2. **Researcher(s):** _____

3. **Your test is planned for:** _____

4. **Location:** _____

5. **Name of alternative to be tested:**

6. **Will crop yield be measured in the study?** Yes _____ No _____

7. **If additional testing is not planned, please explain why. (For example, the available alternatives have been tested and found unsuitable, an alternative has been identified but is not yet registered for this crop, available alternatives are too expensive for this crop, etc.)**

Research efforts will continue, but are not fully defined at this time. Research programs and funding are discussed during the fall and winter months.

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Worksheet 5. Additional Information

1. How will you minimize your use and/or emissions of methyl bromide?

1a. Check all methods you will use

X Nothing
____ Tarpaulin (high density polyethylene)
____ Virtually impermeable film (VIF)
____ Cultural practices (please specify) _____

1b. Will you use other pesticides to reduce use of methyl bromide? Yes X No ____

If yes please specify. When available and industry learns how and has the capability to use them.

1c. Other non-chemical methods: (please specify):

2. Do you have access to recycled methyl bromide? Yes ____ No X

If yes, how many pounds? _____ lbs.

3. Do you anticipate that you will have any methyl bromide in storage on January 1, 2005? Yes ____ No X

If yes, how many pounds? _____ lbs.

4. What is the cumulative amount spent to date by the user or consortium on research to develop alternatives to methyl bromide (beginning in 1992)? $ >$250,000

5. Other investments, if any, made to reduce your reliance on methyl bromide. Describe each investment and its associated cost.

6. Identify what factors would allow you to stop or reduce your use of methyl bromide (e.g. registration of particular pesticide; completion of research plan; capital outlay).

Effective alternatives that can be implemented into current practices, or with minimal expense.

When do you expect these to occur? Unknown

7. Range of acres farmed by growers included in this application?
(insert number of users in each category)

1%	0-10 acres
17%	10-25 acres
22%	25-50 acres
40%	50-100 acres
10%	100-200 acres
10%	200-400 acres
	over 400 acres

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Worksheet 5. Additional Information (continued)

8. **Range of square feet of the area to which applicants included in this application will apply methyl bromide?** (insert number of users in each category)

____ 0 - 5,000 sq. ft.
____ 5,001 - 10,000 sq. ft.
____ 10,001 - 20,000 sq. ft.
____ 20,001 - 40,000 sq. ft.
____ 40,001 - 80,000 sq. ft.
____ 80,001 - 160,000 sq. ft.
____ over 160,000 sq. ft.

I certify that all information contained in this document is factual to the best of my knowledge.

Signature _____ **Date** _____

Print Name _____ **Title** _____

Information in this application may be aggregated with information from other applications and used by the United States government to justify claims in the national nomination package that a particular use of methyl bromide be considered "critical" and authorized for an exemption beyond the 2005 phaseout. Use of aggregate data will be crucial to making compelling arguments in favor of critical use exemptions. **By signing below**, you agree not to assert any claim of confidentiality that would affect the disclosure by EPA of aggregate information based in part on information contained in this application.

Signature _____ **Date** _____

Print Name _____ **Title** _____

Burden means the total time, effort, or financial resources expended by persons to generate, maintain, retain, or disclose or provide information to or for a Federal agency. This includes the time needed to review instructions; develop, acquire, install, and utilize technology and systems for the purposes of collecting, validating, and verifying information, processing and maintaining information, and disclosing and providing information; adjust the existing ways to comply with any previously applicable instructions and requirements; train personnel to be able to respond to a collection of information; search data sources; complete and review the collection of information; and transmit or otherwise disclose the information. Public reporting burden for this collection of information is estimated to average 324 hours per response and assumes a large portion of applications will be submitted by consortia on behalf of many individual users of methyl bromide. An agency may not conduct or sponsor, and a person is not required to respond to, a collection of information unless it displays a current OMB control number.

OMB Control # 2060-0482

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Worksheet 6. Application Summary

This worksheet will be posted on the web to notify the public of requests for critical use exemptions beyond the 2005 phase out for methyl bromide. Therefore, this worksheet cannot be claimed as CBI.

1. Name of Applicant: California Grape & Tree Fruit League

2. Location: Fresno, CA

3. Crop: Grapes (table and raisin) - replant

4. Pounds of Methyl Bromide Requested **2005** 365,000

5. Area Treated with Methyl Bromide **2005** 1,070 acres **units**

6. If methyl bromide is requested for additional years, reason for request:

2006 365,000 **lbs.** **Area Treated** 1070 acres **units**

2007 365,000 **lbs.** **Area Treated** 1070 acres **units**

Place an "X" in the column(s) labeled "Not Technically Feasible" and/or "Not Economically Feasible" where appropriate. Use the "Reasons" column to describe why the potential alternative is not feasible.

Potential Alternatives	Not Technically Feasible	Not Economically Feasible	Reasons
1,3-D	X		Township caps and other use restrictions (use rates and high soil moisture content requirements) limits widespread use and long lasting benefits. These restrictions limit effective use to coarser textured soils.
1,3-D, chloropicrin	X		See above. Addition of chloropicrin does not appear to provide additonal nematode control.
1,3-D, metam sodium	X		See 1,3-D above. Treatment combination is promising, but continued research is required to learn how to deliver material in an efficaceous and economical manner that can fit into commercial production practices.
Metam sodium	X		Erratic results and difficulty of obtaining good distribution in soil is a limiting factor. Availability of economical and commercial delivery equipment that can distribute the material throughout the soil must occur for widespread use of metam sodium.