



**UNITED STATES
ENVIRONMENTAL PROTECTION AGENCY
WASHINGTON, D.C. 20460**

**Application for Critical Use Exemption of Methyl Bromide
for Post Harvest Use in the United States**

**WHY IS THIS
INFORMATION
NEEDED?**

Under the Clean Air Act and the international treaty to protect the ozone layer (the Montreal Protocol on Substances that Deplete the Ozone Layer), the production and import of methyl bromide was phased out in the United States on January 1, 2005. This application seeks information to support a U.S. request to produce and import methyl bromide for certain critical uses and circumstances beyond this 2005 phaseout date.

The information in this application will be used to review whether your use of methyl bromide is "critical" because no technically and economically feasible alternatives are available. In order to estimate the loss as a result of not having methyl bromide available, EPA needs to compare data (commodity prices, revenues, and costs) for your use of methyl bromide with uses of alternative pest control regimens.

The information contained in this application is critical to process and assess the need for methyl bromide. Filling out this application in its entirety will bolster the U.S. government's ability to strengthen the nomination package for the international review boards.

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 38 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.

**For EPA Use Only ID # _____
SECTOR _____**

| INSTRUCTIONS | |
|---|--|
| <p>The information provided by you in this application will be used to evaluate the requested methyl bromide use. The U.S. and other countries that are parties to the Montreal Protocol On Substances That Deplete The Ozone Layer decided that: "a use of methyl bromide should qualify as "critical" only if the nominating Party determines that:</p> <p>(i) The specific use is critical because the lack of availability of methyl bromide for that use would result in a significant market disruption; and</p> <p>(ii) There are no technically and economically feasible alternatives available to the user that are acceptable from the standpoint of environment and health and are suitable to the crops and circumstances of the nomination ..."</p> | |
| WHO APPLIES? | <p>If you anticipate that you will need methyl bromide because you believe there are no technically and economically feasible alternatives, then you should apply for the critical use exemption. This application may be submitted either by a consortium representing multiple users or by individual users. We encourage users with similar circumstances of use to submit a single application (for example, any number of post harvest users with similar commodity, pest, and structural conditions can submit a single application.)</p> <p>If a consortium is applying for multiple methyl bromide users, the economic data should be for a representative or typical user within the consortium unless otherwise noted. If economic or technical factors (such as types of commodities) affecting the ability of this "representative user" to use alternatives are significantly different than other users in the consortium, more than one application should be submitted to reflect these differences.</p> <p>Please contact your local, state, regional, or national commodity association and/or state representative agency to find out if they plan on submitting an application on behalf of your commodity group.</p> |
| WHAT INFORMATION IS REQUIRED? | <p>Critical use exemptions are valid for only one year and do not renew automatically. Users desiring to obtain an exemption must apply annually to EPA. Because of the latest changes in registrations, costs, and economic aspects for producing critical use crops and commodities, all applicants will be required to fill out the application form completely. If these Worksheets are not submitted, EPA will not include the application in the U.S. nomination submitted for international consideration.</p> |
| HOW DO I APPLY? | <p>You may either complete an electronic (Microsoft Word or Excel) or a printed version of the application. Please fill out each section in the application as completely as possible. If you are completing the printed version and need extra space you may attach additional sheets as needed.</p> |
| IS MY INFORMATION CONFIDENTIAL? | <p>The applicant may assert a business confidentiality claim covering part or all of the information in the application by placing on (or attaching to) the information, at the time it is submitted to EPA, a cover sheet, stamped or typed legend, or other suitable form of notice employing language such as trade secret, proprietary, or company confidential. Allegedly confidential portions of otherwise non-confidential documents should be clearly identified by the applicant, and may be submitted separately to facilitate identification and handling by EPA. If the applicant desires confidential treatment only until a certain date or until the occurrence of a certain event, the notice should so state. Information covered by a claim of confidentiality will be disclosed by EPA only to the extent, and by means of the procedures set forth under 40 CFR Part 2 Subpart B; 41 FR 36902, 43 FR 400000. 50 FR 51661. If no claim of confidentiality accompanies the information when it is received by EPA, it may be made available to the public by EPA without further notice to the applicant.</p> <p>Applicants submitting their application via e-mail assume responsibility for the confidentiality of the electronic message transmission.</p> |

| | |
|--|--|
| WHEN IS THE INFORMATION NEEDED? | This application must be postmarked to the EPA address below no later than September 15 . |
|--|--|

| | | |
|--|--|--|
| WHERE DO I SUBMIT THE APPLICATION? | Electronic address for applications: arling.jeremy@epa.gov When submitting an application electronically, you should also sign Worksheet 1 and email or fax it to 202-343-2338 | |
| | Mailing address for applications being submitted by <u>mail</u> directly to the EPA: US Environmental Protection Agency Methyl Bromide Critical Use Exemption Office of Air and Radiation Stratospheric Protection Division (6205T) 1200 Pennsylvania Ave, NW Washington, DC 20460 | Address for applications being sent by <u>courier</u> or <u>non-U.S. Postal overnight express</u> delivery to the EPA: US Environmental Protection Agency Methyl Bromide Critical Use Exemption Office of Air and Radiation Stratospheric Protection Division 1201 Constitution Ave, NW Room 4355RR Washington, DC 20004 |
| HOW CAN I RECEIVE ADDITIONAL INFORMATION? | For general questions about this application: Stratospheric Ozone Information Inbox at spdcomment@epa.gov More information is also at http://www.epa.gov/ozone/mbr | |

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.

Is this information Confidential Business Information: Yes ___ No ___

If yes, the applicant assumes responsibility for the secure transmission of electronic submissions.

Applicant Name:

Primary Contact:

Contact Name:

Address:

Daytime Phone:

Cell:

Fax:

Email Address:

Specialty: (check one) **Agronomic** ___ **Economic** ___

Alternate Contact:

Contact Name:

Address:

Daytime Phone:

Cell:

Fax:

Email Address:

Specialty: (check one) **Agronomic** ___ **Economic** ___

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. **By signing below**, you agree now 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 38 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.

WORKSHEET 1: CONTACT AND METHYL BROMIDE REQUEST INFORMATION (continued)

1. Location of Facility(ies): Enter the name and physical address of the facility(ies) where the proposed critical use of methyl bromide will take place. Provide more details about the location if relevant to the feasibility of alternatives to methyl bromide.

2. Commodity: Include all commodities that benefit from the application of methyl bromide in a fumigation cycle.

3. Range of structure/facility size by processors included in this application: Insert number or percentage of users in each category.

| | |
|-------------------------------------|---------------------------------------|
| 0 to 1,000 (1,000 cu ft) _____ | 10,000 to 50,000 (1,000 cu ft) _____ |
| 1,000 to 5,000 (1,000 cu ft) _____ | 50,000 to 100,000 (1,000 cu ft) _____ |
| 5,000 to 10,000 (1,000 cu ft) _____ | over 100,000 (1,000 cu ft) _____ |

4. Climate Average Minimum Temperature: Individual users should enter their climate zone designation by reviewing the U.S. climate zone map located at the end of this workbook or it can be reviewed online at <http://planthardiness.ars.usda.gov/PHZMWeb>. If a consortium is submitting this application, please indicate the estimated percentage of consortium users in each climate zone. Please check all that apply.

1 _____ 2a _____ 2b _____ 3a _____ 3b _____ 4a _____ 4b _____ 5a _____ 5b _____ 6a _____ 6b _____ 7a _____
7b _____ 8a _____ 8b _____ 9a _____ 9b _____ 10a _____ 10b _____ 11a _____ 11b _____

5. Is this applicant eligible for Quarantine and Preshipment (QPS) uses of methyl bromide:
Yes _____ No _____ If yes, indicate amount: _____ lbs

6. Has this applicant previously applied for Critical Use Exemption of methyl bromide:
Yes _____ No _____ If yes, indicate CUE #: _____

7. What is the amount of methyl bromide being requested by this application: (Do NOT include QPS amounts) If a consortium is submitting this application, the data should be the total for the consortium.

| | | Year: _____ | Year: _____ |
|----|---|-------------|-------------|
| A. | Total Pounds Active Ingredient (a.i.) of Methyl Bromide | | |
| B. | Total Actual Volume (1000 cu. ft.) Treated | | |
| C. | Formulation (Ratio of MB/Pic) to be Used for the CUE | | |
| D. | Use Rate (lbs a.i./1000 cu. ft.) | | |

8. Please explain why there may be variations in the pounds or volume (1,000 cu ft) treated from year to year, especially if the request is higher this year than in previous years:

9. Please explain why methyl bromide is being requested:

10. Do you anticipate that you will have any methyl bromide in storage?

Yes ___ No ___ If yes, please specify amount: _____ lbs

11. Have you adjusted the request for the following issues:

Regulatory Issues: Yes ___ No ___ Pest Pressure: Yes ___ No ___

Adoption of Alternatives: Yes ___ No ___ Other (Please Explain): Yes ___ No ___

WORKSHEET 2: METHYL BROMIDE

Purpose of Data: To establish a baseline estimate of commodity treated, gross profits, and costs using methyl bromide.

Instructions specific to each worksheet are located at the top of each sheet.

| Worksheet | Title |
|-----------|---|
| 2-A | <p><u>Methyl Bromide - Pest and Commodity Information</u></p> <p>If a consortium is submitting this application, the data for this table should reflect the representative user for the consortium.</p> <p>The purpose of this worksheet is to determine pest infestation and commodity information where methyl bromide is used. This forms the baseline for evaluating the impacts of using an alternative to replace methyl bromide.</p> |
| 2-B | <p><u>Methyl Bromide - Historical Use</u></p> <p>If a consortium is submitting this application, all data should reflect the actual data for the consortium.</p> <p>This worksheet provides data in actual usage for the last five years.</p> |
| 2-C | <p><u>Methyl Bromide - Commodity Treated and Gross Profits</u></p> <p>If a consortium is submitting this application, the data for this table should reflect the representative user for the consortium.</p> <p>This worksheet provides commodity treated and gross profits for the last five years. The purpose of this worksheet is to determine past gross profits when methyl bromide is used. This forms the baseline for evaluating the revenue impacts of using an alternative to replace methyl bromide.</p> |
| 2-D | <p><u>Baseline - Operating Costs</u></p> <p>If a consortium is submitting this application, the data for this table should reflect the representative user for the consortium.</p> <p>This data is needed to estimate a baseline for operating costs in order to estimate changes in costs and the impact on operating profit and short-run economic viability as a result of not using methyl bromide.</p> <p>The purpose of this worksheet is to determine operating expenses when methyl bromide is used. This forms the baseline for evaluating the cost impacts of using an alternative to replace methyl bromide. The data requested are designed to help you identify how your operation would change if methyl bromide were unavailable, which will be shown in Worksheet 3-B.</p> |

WORKSHEET 2-A: METHYL BROMIDE – PEST & PROCESSING INFORMATION

1. Commodity or Consortium:

2. What month does your fumigation cycle start: Please check only one.

| Jan | Feb | Mar | Apr | May | Jun | Jul | Aug | Sept | Oct | Nov | Dec |
|-----|-----|-----|-----|-----|-----|-----|-----|------|-----|-----|-----|
| | | | | | | | | | | | |

3. **Fumigation Timeline:** Indicate when fumigation, major commodity and pest management practices typically occur. If the fumigation cycle is longer than one year, change the months to an appropriate interval.

| Beginning Fumigation Cycle | Time Interval _____ (e.g. WEEKS/MONTH/YEAR/SEASON) | | | | | | | | | | | |
|------------------------------|---|--|--|--|--|--|--|--|--|--|--|--|
| | | | | | | | | | | | | |
| (please define time periods) | | | | | | | | | | | | |
| Facility Preparation | | | | | | | | | | | | |
| Sealing | | | | | | | | | | | | |
| Cleaning | | | | | | | | | | | | |
| Fumigation Timeline | | | | | | | | | | | | |
| Reception of Raw Materials | | | | | | | | | | | | |
| Processing | | | | | | | | | | | | |
| Storage | | | | | | | | | | | | |
| Raw Materials | | | | | | | | | | | | |
| Finished Product | | | | | | | | | | | | |
| Packing | | | | | | | | | | | | |
| Shipping | | | | | | | | | | | | |
| Retail Market Window | | | | | | | | | | | | |
| Other Pest Treatments | | | | | | | | | | | | |
| Other | | | | | | | | | | | | |
| | | | | | | | | | | | | |

4. Please provide a simplified schematic diagram which illustrates the basic steps of the commodity moving through the process from raw material to finished product:

4a. Provide a narrative of market channel for each commodity, where it is fumigated, and how the fumigation effects market availability and commodity sale:

5. Target Pest(s) or Pest Problem(s): Please identify the key target pests or pest problems for which methyl bromide is requested. Provide at least common name and genus and species if possible. Additional pests or pest problems can be provided as an attachment. Please also explain the specific reasons why methyl bromide is being requested for each pest [e.g., effective herbicide is available, but not registered for this crop; mandatory requirement to meet certification for disease tolerance].

| | Common Name | Genus | Specific Reasons Why Methyl Bromide Is Needed |
|---------------|-------------|-------|---|
| Pest 1 | | | |
| Pest 2 | | | |
| Pest 3 | | | |
| Pest 4 | | | |
| Pest 5 | | | |

6. Pest Economic Threshold: Please provide the economic threshold information for each pest. Describe year and source of information such as survey or expert estimate.

| | Threshold | Units (e.g. pests/sq ft) | Year | Source |
|---------------|-----------|--------------------------|------|--------|
| Pest 1 | | | | |
| Pest 2 | | | | |
| Pest 3 | | | | |
| Pest 4 | | | | |
| Pest 5 | | | | |

7. Target Pest Infestation: Please estimate the percentage of this user's total structural/facility volume with a moderate to severe problem with these pests. Describe source of information such as a survey or expert estimate.

| | Percentage of Total Structure/Facility | Source |
|---------------|--|--------|
| Pest 1 | % | |
| Pest 2 | % | |
| Pest 3 | % | |

8. Representative User: Please provide descriptive factors appropriate for your operation.

- a. Number of Facilities: _____
b. Gastightness Estimate (if available):* _____

* Give gastightness estimates where possible according to the following scale: **good** - less than 25% gas loss within 24 hours or half loss time of pressure difference greater than 1 minute; **medium** - 25-50% gas loss within 24 hours or half loss time of pressure difference greater than 10 seconds; **poor** - 50-90% gas loss within 24 hours or half loss time of pressure difference 1-10 second; **very poor** - more than 90% gas loss within 24 hours or a pressure half loss time of less than 1 second.

9. In what part and phase of the operation does the methyl bromide fumigation take place: Please check all that apply and indicate exposure time.

- Structure / Facility:** _____
Fumigation Chamber: _____
Commodity: _____
Prior to Storage: _____
Storage: _____
Prior to Shipping: _____
All: _____

Other: _____

10. For what percentage of the operation have alternative(s) replaced methyl bromide in processing this commodity and if so, during what phase of the process:

| Alternative | % Replaced | Phase of Process | Details |
|---------------------------------|-------------------|-------------------------|----------------|
| Phosphine (Alone) | | | |
| Heat Treatment | | | |
| Phosphine in Combination | | | |
| Sulfuryl Fluoride | | | |
| Other | | | |

11. Please provide a brief description of any equipment fumigated in this operation:

WORKSHEET 2-B: METHYL BROMIDE – HISTORICAL USE

| | |
|---------------|---|
| Row A: | <u>Year</u> Enter dates for the last five years. For example, for applications filled out in 2015, provide data from 2010-2014. |
| Row B: | <u>Total Actual Pounds a.i. of Methyl Bromide Applied</u> Enter the total actual pounds active ingredient (a.i.) of methyl bromide applied. Note: This number should be the total pounds a.i. applied by the individual user or the entire consortium, for the year indicated. Include only the pounds active ingredient of methyl bromide. |
| Row C: | <u>Total Actual Volume (1,000 cu ft) Treated</u> Enter the total actual volume (1,000 cu ft) treated. Note: This number should be the total actual volume (1,000 cu ft) treated by the individual user or total actual volume (1,000 cu ft) treated for the entire consortium, for the year indicated. |
| Row D: | <u>Formulation (Ratio of MB/Pic Mixture) to be Used for the CUE</u> Enter the formulation of methyl bromide used (e.g. MB 98:2; MB/Pic 70:30). |
| Row: E | <u>Use Rate (lbs a.i./1000 cu. ft.)</u> Enter the use rate in pounds a.i. of methyl bromide per area. |

| | | | | | | |
|-----------|---|--|--|--|--|--|
| A. | Year | | | | | |
| B. | Total Actual Pounds a.i. of Methyl Bromide Applied | | | | | |
| C. | Total Actual Volume (1,000 cu ft) Treated | | | | | |
| D. | Formulation (Ratio of MB/Pic Mixture) to be Used for the CUE | | | | | |
| E. | Use Rate (lbs a.i./1000 cu. ft.) | | | | | |

What is the frequency of methyl bromide applied per volume (1,000 cu ft): (1x / year, 2x / year, 1x / 3 years, etc.)

_____ times per _____

If there is a variation (greater than 10%) in the quantity a.i., the acres treated or average application rate from year to year, please explain the reasons for the variation:

Comments:

WORKSHEET 2-C: BASELINE – METHYL BROMIDE – COMMODITY TREATED & GROSS PROFIT

| | |
|------------------|---|
| Column A: | <u>Year</u> Be sure to enter the year. Use as many rows as needed for each year for all the commodities in the fumigation cycles for the last five years. If a fumigation cycle overlaps more than one calendar year, then the year of the fumigation cycle is the year methyl bromide was applied. |
| Column B: | <u>Commodity</u> Enter all commodities that benefit from methyl bromide in the fumigation cycle (interval between fumigations). See the Definitions page 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 commodity treated in the same facility/structure, please indicate so in the comments section below. |
| Column C: | <u>Market Categories</u> Enter marketing categories that determine prices received, for example, grade (quality, taste, color) or timeliness (holiday market season, early season, late season). Itemize or aggregate these factors to the extent appropriate if lack of methyl bromide would affect the price in each category. |
| Column D: | <u>Unit of Commodity</u> Enter the unit of measurement for each commodity (lbs, tons, cwt). If not by weight, specify in the comments section the average weight of the measure. For the international review board, all measures will be converted to metric. |
| Column E: | <u>Total Commodity Treated</u> Enter the total units of commodity treated with methyl bromide and processed/sold per area. |
| Column F: | <u>Price</u> Enter average prices received by the users for that commodity and category. For the total line, you do not have to enter a price. Average price over all categories can be calculated separately, if needed. If a commodity treated is never owned by the facility, indicate the fees charged for all services. |
| Column G: | <u>Cost of Goods Sold</u> Enter the total cost of goods sold (raw materials purchased) during the period. If this expense is not relevant to your post-harvesting operation, please skip this column. |
| Column H: | <u>Gross Profit</u> Gross profit may be calculated using the data you entered as the Total Commodity Treated times Price minus the Cost of Goods Sold. If gross profit is not equal to total commodity sold times price subtracted by cost of goods sold ((Column E * Column F) - Column G), you may override the formula and enter a different revenue amount. Please explain why this gross profit amount is different in the comment section below. |

| A | B | C | D | E | F | G | H |
|------|-----------|--|-------------------------------------|---|-------------------------------|--|--------------------------------------|
| Year | Commodity | Market Category (grade, time, end use) | Unit of Commodity (e.g., lbs, tons) | Total Commodity Treated (per unit of commodity) | Price (per unit of commodity) | Cost of Goods Sold (per unit of commodity) | Gross Profit (per unit of commodity) |
| | | | | | | | |
| | | | | | | | |
| | | | | | | | |
| | | | | | | | |

Comments:

WORKSHEET 2-D: METHYL BROMIDE – OPERATING COSTS

The purpose of this section is to determine operating expenses when methyl bromide is used. This forms the baseline for evaluating the cost impacts of using an alternative to replace methyl bromide. The data requested are designed to help you identify how your operation would change if methyl bromide were unavailable, which will be shown in Worksheet 3-B. Please fill in the unshaded areas. The shaded areas can be used if the information is known.

| | |
|------------------|---|
| Column A: | <u>Operating Expense Items</u> Identify the operations to which the costs apply. You may add or delete lines as necessary. The operating expense items listed here are not meant to be exhaustive or be representative of your specific operating system. Other operating expenses include, but are not limited to, wage/salary, advertising and selling, utilities, rent and lease, insurance, and supplies. Be as precise as necessary to explain how lack of methyl bromide would affect your operation, otherwise you may aggregate operating expenses. These are meant to provide suggestions and to help you identify how your operation would change if methyl bromide were unavailable. |
| Column B: | <u>Quantity Used per Volume (1,000 cu ft) or Weight (short tons)</u> This field is required only for methyl bromide. However you may include specific amounts of other inputs or operations if you believe it helps to document the additional costs you would incur by using an alternative fumigant. |
| Column C: | <u>Units (lbs. hours, etc.)</u> For all inputs and operations detailed in Column B, please specify the units of measurement. |
| Column D: | <u>Unit Cost (\$)</u> For all inputs and operations detailed in Column B, please specify the unit cost. Also, indicate all costs of applying methyl bromide, including any material costs (e.g. tarps). If custom applied and separate costs are unavailable, write 'custom' and enter total cost in Column E. |
| Column E: | <u>Cost (\$) per Volume (1,000 cu ft) or Cost (\$) per Weight (short tons)</u> Enter all appropriate costs of operations per volume (1,000 cu ft) or weight (short tons). You may add or delete lines as necessary. If operation is defined in either cost per volume or cost per weight, please keep the continuity of units. |

| A | B | C | D | E |
|---|---|---------------------------|----------------|---|
| Operating Expense Items | Quantity Used per Volume (1,000 cu. ft.) or Weight (short tons) | Units (lbs., hours, etc.) | Unit Cost (\$) | Cost (\$) per Volume (1,000 cu. ft.) or Cost (\$) per Weight (short tons) |
| 1. Pest Management Costs (a+b+c+d) | | | | |
| a) Sanitation | | | | |
| b) Pest Control | | | | |
| c) Methyl Bromide Fumigation (c1+c2) | | | | |
| c1) Product | | | | |
| c2) Application | | | | |
| d) Other Pest Management Costs | | | | |
| 2. Repairs / Maintenance / Replacement | | | | |
| 3. Interest | | | | |
| 4. Depreciation for Plant Assets | | | | |
| 5. Other Operating Expenses | | | | |
| TOTAL OPERATING COST | | | | |

WORKSHEET 3: ALTERNATIVES – FEASIBILITY OF ALTERNATIVE PEST CONTROL REGIMENS

Purpose of Data: To estimate the loss as a result of not having methyl bromide available. EPA needs to compare data (commodity prices, gross profit, operating expenses, etc.) on the use of methyl bromide and alternative pest control regimens.

Complete Worksheet 3-A for each alternative pest control regimen. Please indicate the name of the specific alternative pest control regimen addressed and add additional pages as required.

Enter all alternative pesticides and pest control methods (and associated cost and yield data) that would replace one treatment of methyl bromide throughout the fumigation cycle. See the Definitions page for a comprehensive definition on fumigation cycles.

| Worksheet | Title |
|-----------|--|
| 3-A | <p><u>Alternatives - Technical Feasibility of Alternatives to Methyl Bromide</u></p> <p>You must complete one worksheet for each alternative. Please insert the name of the alternative in the area on top of the page. If you prefer, you may provide the information requested in this worksheet in a narrative review. However, you must fill in the information in Question #1 or we will assume no production or quality loss.</p> |
| 3-B | <p><u>Alternatives - Changes in Operating Costs</u></p> <p>If a consortium is submitting this application, the data for this table should reflect the representative user for the consortium.</p> <p>This data is needed to estimate a baseline for operating costs in order to estimate changes in costs and the impact on operating profit and short-run economic viability as a result of not using methyl bromide and to provide required information to the international review board.</p> <p>Please fill out this worksheet for each alternative for which the economic evaluation would bolster the case that methyl bromide is needed.</p> <p>The purpose of this worksheet is to determine operating expenses when alternatives are used for evaluating the cost impacts of using an alternative to replace methyl bromide. The data requested are designed to help you identify how your operation would change if methyl bromide were unavailable.</p> |
| 3-C | <p><u>Alternatives - Economic Feasibility of Alternatives to Methyl Bromide</u></p> <p>If a consortium is submitting this application, the data for this table should reflect the representative user for the consortium.</p> <p>Please include in this worksheet data for each alternative included in worksheets 3-A and 3-B.</p> |

WORKSHEET 3-A: ALTERNATIVES – FEASIBILITY OF ALTERNATIVE PEST CONTROL REGIMENS

Name of Alternative:

1. Pest Control When Comparing This Alternative to Methyl Bromide: Provide numerical estimates where possible.

| Study # | Pest Being Tested | Relative % Pest Control | Scale of Study (e.g. pilot, plot) | Resulting Damages (please specify) |
|---------|-------------------|-------------------------|-----------------------------------|------------------------------------|
| 1 | | | | |
| 2 | | | | |
| 3 | | | | |
| 4 | | | | |
| 5 | | | | |

2. Study Information: For the cited studies above, please list: study name, authors, publication, date, and indicate with a checkmark if a copy is attached and if it is on the EPA website.

| Study # | Copy? | EPA? | Month/Year project started and finished (e.g. Nov '09 - Oct '12) | Details |
|---------|-------|------|--|---------|
| 1 | | | | |
| 2 | | | | |
| 3 | | | | |
| 4 | | | | |
| 5 | | | | |

3. Are there any production delays (downtime) associated with this alternative? Yes ___ No ___

If yes, please continue with 3a, 3b, 3c.

3a. Please specify the number of days per year of downtime: _____ days/year

3b. What is the cost of production delays or downtime per year? \$ _____ per year

3c. Please explain the details of going into downtime and why it is necessary with this alternative:

4. What is the estimated probability of the commodity not meeting consumer quality standards with and without methyl bromide or alternative treatments: Please explain.

5. Restrictions/Limitations on Alternative Use: This information will be used to determine the amount of methyl bromide needed.

| | % of Structure/Facility/Volume | Details |
|---|--------------------------------|---------|
| Regulatory Restriction | | |
| - Label Restriction | | |
| Climate Restriction | | |
| Pest Resistant To Alternative | | |
| Structural Limitations | | |
| Facility Limitations | | |
| Other Restrictions/Limitations (Describe) | | |

6. Why is this alternative not suitable to replace 100% of methyl bromide use in processing this commodity:

7. Use Rate of Chemical Alternative:

| Active Ingredient (a.i.) | Name of Product and Formulation | Quantity per Volume (1,000 cu ft) | Units (gals, lbs, etc.) | Volume (1,000 cu ft) Treated | # of Applications per Year |
|--------------------------|---------------------------------|-----------------------------------|-------------------------|------------------------------|----------------------------|
| | | | | | |
| | | | | | |
| | | | | | |
| | | | | | |

8. Non-Chemical Pest Control: Please describe.

9. Fumigation Timeline: Indicate when fumigation, major commodity and pest management practices typically occur. If the fumigation cycle is longer than one year, change the months to an appropriate interval.

| Fumigation Cycle | Time Interval (e.g. WEEKS/MONTH/YEAR) | | | | | | | | | | | |
|----------------------------|---------------------------------------|---|---|---|---|---|---|---|---|----|----|----|
| | 1 | 2 | 3 | 4 | 5 | 6 | 7 | 8 | 9 | 10 | 11 | 12 |
| Facility Preparation | | | | | | | | | | | | |
| Sealing | | | | | | | | | | | | |
| Cleaning | | | | | | | | | | | | |
| Fumigation Timeline | | | | | | | | | | | | |
| Reception of Raw Materials | | | | | | | | | | | | |
| Processing | | | | | | | | | | | | |
| Storage | | | | | | | | | | | | |
| Raw Materials | | | | | | | | | | | | |
| Finished Product | | | | | | | | | | | | |
| Packing | | | | | | | | | | | | |
| Shipping | | | | | | | | | | | | |
| Retail Market Window | | | | | | | | | | | | |
| Other Pest Treatments | | | | | | | | | | | | |
| Other | | | | | | | | | | | | |

Comments:

WORKSHEET 3-B: ALTERNATIVE – CHANGES IN OPERATING EXPENSES

Name of Alternative:

| | |
|------------------|--|
| Column A: | Operating Expense Items Identify the operations to which the costs apply. You may add or delete lines as necessary. The operating expense items listed here are not meant to be exhaustive or be representative of your specific operating system. These are meant to provide suggestions and to help you identify how your operation would change if methyl bromide were unavailable. |
| Column B: | Quantity Used per Volume (1,000 cu ft) or Weight (short tons) This field is required only for alternatives. However you may include specific amounts of other inputs or operations if you believe it helps to document the additional costs you would incur by using an alternative fumigant. |
| Column C: | Units (lbs. hours, etc.) For all inputs and operations detailed in Column B, please specify the units of measurement. |
| Column D: | Unit Cost (\$) For all inputs and operations detailed in Column B, please specify the unit cost. Also, indicate all costs of applying alternatives, including any material costs (e.g. tarps). If custom applied and separate costs are unavailable, write 'custom' and enter total cost in Column E. |
| Column E: | Cost (\$) per Volume (1,000 cu ft) or Cost (\$) per Weight (short tons) Enter all appropriate costs of operations per volume (1,000 cu ft) or weight (short tons). You may add or delete lines as necessary. If operation is defined in either cost per volume or cost per weight, please keep the continuity of units. |

| A | B | C | D | E |
|---|---|---------------------------|----------------|---|
| Operating Expense Items | Quantity Used per Volume (1,000 cu ft) or Weight (short tons) | Units (lbs., hours, etc.) | Unit Cost (\$) | Cost (\$) per Volume (1,000 cu. ft.) or Cost (\$) per Weight (short tons) |
| 1. Pest Management Costs (a+b+c+d) | | | | |
| a) Sanitation | | | | |
| b) Pest Control | | | | |
| c) Fumigation (c1+c2) | | | | |
| c1) Product | | | | |
| c2) Application | | | | |
| d) Other Pest Management Costs | | | | |
| 2. Repairs / Maintenance / Replacement | | | | |
| 3. Interest | | | | |
| 4. Depreciation for Plant Assets | | | | |
| 5. Other Operating Expenses | | | | |
| | | | | |
| TOTAL OPERATING COST | | | | |

4. What are the additional new investments (structures, facilities, equipment, fumigation chambers, etc.) needed to utilize this alternative: Establish necessary capital expenditures required for the uses of alternatives. For example, the incremental costs to convert to heat treatment might include installing a steam heating system, purchasing generators, installing necessary ductwork, and retrofitting other components to make them amenable to heat treatment.

| Type of Investment | Total Investment (\$) | Life of Investment (# of years) | Salvage Value (\$) | Interest Rate (%) |
|--------------------|-----------------------|---------------------------------|--------------------|-------------------|
| | | | | |
| | | | | |
| | | | | |
| | | | | |

Comments:

WORKSHEET 4: EMISSION CONTROL

1. How do you currently minimize use and/or emissions of methyl bromide, and how do you plan to further reduce use and/or emissions in the future: For all use/emissions reduction technique that you use, please fill out the text, where provided, or state the adoption rate and/or describe changes.

| | What use/emission reduction methods are you currently using? Please state the emission reduction amounts. | What further use/emission reduction methods will be used for critical uses? Please project the reduction amounts for the year being requested. |
|--|--|---|
| Methyl Bromide Dosage Reduction | _____ lbs/1,000 cu ft | _____ lbs/1,000 cu ft |
| | _____ lbs/1,000 cu ft | _____ lbs/1,000 cu ft |
| Less Frequent Application | _____ times per _____ | _____ times per _____ |
| | _____ times per _____ | _____ times per _____ |
| Formulation Changes (please specify) | _____ % MeBr, _____ % Pic | _____ % MeBr, _____ % Pic |
| | _____ % MeBr, _____ % Pic | _____ % MeBr, _____ % Pic |
| Reclamation | | |
| Sealing Buildings | | |
| Integrated Pest Management (IPM) | | |
| Cultural Practices (please specify) | | |
| Other Pesticides (please specify) | | |
| Non-Chemical Methods (please specify) | | |
| Other Measures (please specify) | | |

2. If methyl bromide emission reduction techniques are not being used, or are not planned for the future, state reasons:

WORKSHEET 5: FUTURE RESEARCH PLANS

1. Identify the top 3 to 5 target pests for your research:

- 1.
- 2.
- 3.
- 4.
- 5.

2. Provide a list of alternative chemicals or cultural practices that have been tested:

- 1.
- 2.
- 3.
- 4.
- 5.

3. Prioritize the alternative chemicals or cultural practices to be tested:

- 1.
- 2.
- 3.
- 4.
- 5.

4. What would be the best currently available alternative if methyl bromide were not available:

5. Are there any other potential alternatives under development which are being considered to replace methyl bromide:

6. Are there technologies being used to produce the crop which avoid the need for methyl bromide? Please explain whether such technologies could replace a proportion of proposed methyl bromide use:

7. Please provide an overview/timeline of the plan to transition away from using methyl bromide:

8. Will you include incidence reports where a commodity fails:

9. Please describe the management strategies that are in place or proposed to eliminate the use of methyl bromide for the nominated critical use, e.g., measures to avoid any increase in methyl bromide consumption, measure to encourage the use of alternatives, information on the market penetration of newly deployed alternatives and alternatives that may be used in the near future:

10. What is the cumulative amount spent and the types of contributions this consortium has made to fund research to develop alternatives to methyl bromide since 1992, e.g. consortium dues, direct research funding, etc.: Please add additional rows if necessary.

| Years | Name of Organization / Research Institution | Amount (\$) |
|-------|---|-------------|
| | | |
| | | |

11. Other total investments, if any, made to reduce your reliance on methyl bromide: \$ _____
Describe each investment and its associated costs (e.g. specialized machinery, etc.). Please add additional rows if necessary.

| Investment | Cost |
|------------|------|
| | |
| | |
| | |
| | |

13. Grant requests made to USDA, EPA, state, or other funding group:

For EPA Use Only ID # _____
SECTOR _____

WORKSHEET 6: SUMMARY

This section may be posted on the web to notify the public of requests for critical use exemptions beyond the 2005 phaseout for methyl bromide. Therefore, this section cannot be claimed as CBI.

1. Consortium Name:

2. Location:

3. Crop:

4: Year:

4. Pounds of Methyl Bromide Requested:

5. Volume Treated with Methyl Bromide: _____ (1,000 cu. ft.)

6. **Summary of Alternatives Not Feasible:** 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. Please add additional rows if necessary.

| Potential Alternative | Not Technically Feasible | Not Economically Feasible | Reasons |
|-----------------------|--------------------------|---------------------------|---------|
| | | | |
| | | | |
| | | | |
| | | | |
| | | | |
| | | | |
| | | | |
| | | | |

Definitions:

| | |
|-----------------------------------|---|
| Fumigation cycle: | The period of time between methyl bromide fumigations. |
| Year: | If a fumigation cycle overlaps more than one calendar year, "year" refers to the calendar year when methyl bromide is applied (or the beginning of the cycle). |
| Comparable data: | In order to compare revenues and costs with and without methyl bromide, data on alternatives for pest control, yields, revenues, and costs must be for the same time interval as the methyl bromide fumigation cycle. If, however, quantitative data, is not available for the entire fumigation cycle, then to be comparable, the quantitative data for the alternatives should cover the same portion of the fumigation cycle as the quantitative data for methyl bromide, and the rest of the cycle should be discussed in the comments sections. |
| 2-year example: | If a methyl bromide fumigation is made every 2 years, then the 2003 fumigation cycle began in 2003 and would end in 2005. The data should cover the methyl bromide costs and usage for the methyl bromide fumigation made in 2003, and all yields and revenues received and other costs incurred during the 2 year period. To be comparable, the data on alternatives should cover a similar 2 year period beginning at the same time of year when a methyl bromide fumigation would be made. The data should cover all methyl bromide alternatives used, and all yields and revenues received during that 2-year interval. Other pest control and other costs would only need to be provided for that interval if they would change from what they were with methyl bromide. |
| Other beneficiary example | If someone other than the applicant benefits from a methyl bromide fumigation, you should comment on these benefits if you do not have quantitative data for the entire fumigation cycle. For example, if a rotational crop in the second year benefits from a methyl bromide fumigation a year earlier, but there is quantitative data only on the first crop, then the data on the alternatives should cover only the first crop, and the benefits of methyl bromide and the additional pesticides that would have to be used on the rotational crop should be discussed in the comments sections. |
| Crop cycle change example: | If in a one year interval, methyl bromide is applied, tomatoes are grown and harvested followed by peppers, then the fumigation cycle would be one year including the tomatoes and peppers. If, however, without methyl bromide, it is not possible to follow tomatoes with peppers in the same one year interval, then the alternative data on pesticides, costs, yields, and revenues should just cover tomatoes. The loss of profit from not being able to grow peppers with the alternatives would be part of the loss from not having methyl bromide. |
| Crop Grouping | The applicant can group similar crops together if: (i) Crops would experience similar yield and quality losses in the absence of methyl bromide; and (ii) Crops are grown on the same fumigation and cultivation cycle with similar operating costs. For example, nursery crops including various flower or tree species can be aggregated, with average yields per acre and prices. However, if crops are distinctly different in revenues and operating costs, or the cycles, the applicant may want to present yield, price and operating costs for each crop separately and also indicate the proportion of land area allocated to each crop. |

