

**MONTREAL PROTOCOL
ON SUBSTANCES THAT DEplete
THE OZONE LAYER**



UNEP

**REPORT OF THE TECHNOLOGY AND ECONOMIC ASSESSMENT
PANEL**

**Critical Use Nominations
Interim Evaluation of 2004 Nominations**

JUNE 2004

Montreal Protocol
On Substances that Deplete the Ozone Layer

Report of the
UNEP Technology and Economic Assessment Panel
Critical Use Nominations
Interim Evaluation of 2004 Nominations

June 2004

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UNEP TECHNOLOGY AND ECONOMIC ASSESSMENT PANEL

CRITICAL USE NOMINATIONS
INTERIM EVALUATION OF 2004 NOMINATIONS

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1 Introduction to MBTOC Evaluation of Critical Use Exemptions

1.1 Basis of Mandate

Under Article 2H of the Montreal Protocol the production and consumption (defined as production plus imports minus exports) of methyl bromide is to be phased out in Parties not operating under Article 5(1) of the Protocol by 1 January 2005. However, the Parties agreed to a provision enabling exemptions for those uses of methyl bromide that can be regarded as critical. Parties established criteria, under Decision IX/6 of the Protocol, which all such uses need to meet in order to be granted an exemption. The Decision IX/6 states that:

1. To apply the following criteria and procedure in assessing a critical methyl bromide use for the purposes of control measures in Article 2 of the Protocol:

- (a) That a use of methyl bromide should qualify as “critical” only if the nominating Party determines that:*
 - (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*
 - (ii) There are no technically and economically feasible alternatives or substitutes 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;*
 - (b) That production and consumption, if any, of methyl bromide for critical uses should be permitted only if:*
 - (i) All technically and economically feasible steps have been taken to minimise the critical use and any associated emission of methyl bromide;*
 - (ii) Methyl bromide is not available in sufficient quantity and quality from existing stocks of banked or recycled methyl bromide, also bearing in mind the developing countries’ need for methyl bromide;*
 - (iii) It is demonstrated that an appropriate effort is being made to evaluate, commercialise and secure national regulatory approval of alternatives and substitutes, taking into consideration the circumstances of the particular nomination and the special needs of Article 5 Parties, including lack of financial and expert resources, institutional capacity, and information. Non-Article 5 Parties must demonstrate that research programmes are in place to develop and deploy alternatives and substitutes. Article 5 Parties must demonstrate that feasible alternatives shall be adopted as soon as they are confirmed as suitable to the Party’s specific conditions and/or that they have applied to the Multilateral Fund or other sources for assistance in identifying, evaluating, adapting and demonstrating such options;*
- 2. To request the Technology and Economic Assessment Panel to review nominations and make recommendations based on the criteria established in paragraphs 1 (a) (ii) and 1 (b) of the present decision;*

3. That the present decision will apply to Parties operating under Article 5 and Parties not so operating only after the phase-out date applicable to those Parties.

Paragraph 2 of Decision IX/6 does not assign TEAP the responsibility for determining the existence of “significant market disruption” specified in paragraph 1(a)(i).

TEAP assigned its Methyl Bromide Technical Options Committee (MBTOC) to assess whether there are *no technically and economically feasible alternatives or substitutes 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*, and to address the criteria listed in Decision IX/6 1(b).

Evaluations in this 2004 round of CUNs were made in accordance with Decision Ex. I/5(7) that required evaluations to be categorised as “recommended”, “not recommended” or “unable to assess”. Decision Ex. I/5(8) determined that if TEAP and MBTOC did not recommend any part of a nomination, a clear description should be given of the nominating Party’s request for an exemption and of the reasons why TEAP and MBTOC did not accept it, including references to the relevant studies, wherever available, used as the basis for such a decision.

TEAP and its MBTOC prepared a handbook on Critical Use Nomination (CUN) procedures, as requested in Decision XIII/11. The second edition of ‘The Handbook on Critical Use Nominations for Methyl Bromide’ was published in August 2003. It sets out a framework, process and the steps leading to a critical use exemption (CUE). Most Parties submitted nominations conforming to the second edition.

1.2 MBTOC and TEAP process for consideration of CUNs

1.2.1 Process

Some Parties submitted nominations to the Ozone Secretariat prior to the originally prescribed 31 January 2004 deadline, while other Parties submitted nominations by the 28 February extended deadline agreed at the Extraordinary Meeting of the Parties (ExMOP) in March 2004.

MBTOC co-chairs received CUNs from UNEP's Ozone Secretariat during March 2004. These were posted on a password protected Internet site for access by MBTOC members in electronic form, in preparation to the MBTOC meeting to evaluate the CUNs. MBTOC members unable to access this site were supplied with copies of CUNs by other means.

MBTOC met in Montreal, Canada, from 26 March to 1 April 2004 to consider nominations. Check list style evaluation forms were generated to provide the Committee with the ability to assess the large number of nominations efficiently and equitably. These include reference to the basis for the questions asked as part of the

evaluation, specifically relevant sections of Decision IX/6 or the Handbook (August 2003 version).

In addition to the normal Disclosure of Interest required under the TEAP/TOC terms of reference, MBTOC members made an additional disclosure relating specifically to their level of national, regional or enterprise involvement in the CUN process. This was required to ensure that those with a high level of involvement and interest in developing a particular nomination did not bias the process of evaluation through participation in the detailed review. Several MBTOC members were disqualified from review of specific nominations as a result of this process.

A soil subcommittee in MBTOC considered the nominations relating to use of MB for soil fumigation, while a postharvest subcommittee considered the nominations relating to the use of MB for fumigation of commodities, structures and objects. All drafts arising from the subcommittees were considered in plenary with the aim of reaching consensus decisions.

As with initial consideration of the 2003 round of CUNs, MBTOC noted the need to seek additional information from specific Parties on a number of nominations. Some CUNs, placed in the 'unable to assess' category, were referred back to Parties for clarification or provision of additional information.

Nominations in the 2004 round were prepared by Parties and submitted to the Ozone Secretariat prior to the ExMOP, and thus did not take into account decisions made at that meeting. The CUEs approved by the ExMOP for 2005 use were taken by MBTOC to be baseline data when considering CUNs for 2006.

The recommendations in the interim report of MBTOC were forwarded to TEAP for review and presentation at the 24th OEWG in Geneva, July 2004. It was anticipated that a final evaluation and report would be presented on this (2004) round on CUNs prior to the 16th MOP, to be held November 2004, incorporating advice from the OEWG and after consideration of further information provided on nominations, as foreshadowed in Decision Ex. I/5(8).

2 Critical Use Nominations Review

In considering the CUNs submitted in 2004, MBTOC applied the same standards, where possible, that it used in 2003 for evaluations published in the February 2004 report of the TEAP (TEAP 2004). In particular MBTOC sought to provide consistent treatment of CUNs within and between Parties, and for specific crops and situations.

2.1 Consideration of alternatives

In evaluating the CUNs for soil treatments, MBTOC assumed that a technically feasible alternative to MB would need to provide sufficient pest and weed control for continued production of that crop to the existing market standards.

For commodity and structural applications, it was assumed that the objectives of the MB treatment, e.g. meeting infestation standards in finished product from a mill, would be met by any process considered a technically feasible alternative to MB.

Furthermore, MBTOC relied on the definition of alternatives to MB used in its 2002 Assessment. This reads, in part:

Definition of an alternative

- MBTOC defined 'alternatives' as those non-chemical or chemical treatments and/or procedures that are technically feasible for controlling pests, thus avoiding or replacing the use of MB. 'Existing alternatives' are those in present or past use in some regions. 'Potential alternatives' are those in the process of investigation or development.
- MBTOC assumed that an alternative demonstrated in one region of the world would be technically applicable in another unless there were obvious constraints to the contrary e.g., a very different climate or pest complex.

Where a Party stated that one or more alternatives were not available because of economic considerations, this was accepted without comment. The meaning of economic feasibility in the sense of Decision IX/6 is still under consideration.

2.2 Period of nominations

The ExMOP, in considering the 2003 round of CUNs, decided on approving CUEs for MB use in 2005 only. Most Parties submitted CUNs in the 2004 round for only 2005, 2006 or for both years. A few Parties submitted nominations with longer timeframes. In this report MBTOC provides evaluations only of the nominations for 2005 and 2006.

Technical difficulties with the approval of CUEs are discussed in the May and October 2003 reports of TEAP (TEAP 2003a, TEAP 2003b) although longer

timeframes are envisaged in 'The Handbook on Critical Use Nominations for Methyl Bromide' of August 2003.

2.3 New or recently increased uses of MB

There was little consistency between CUNs with regard to treatment of projected increases in crop area potentially requiring MB and for which a CUE was sought. One Party specifically excluded any new areas from its calculations while others increased their request to allow new production areas. MBTOC used the figures as provided by the nominating Party in its analyses.

2.4 Plans to develop, register and deploy alternatives

To qualify for a CUE, Decision XI/6 in part states that Parties must demonstrate that "...an appropriate effort is being made to evaluate, commercialise and secure national regulatory approval of alternatives and substitutes, taking into consideration the circumstances of the particular nomination...." and "...must demonstrate that research programmes are in place to develop and deploy alternatives and substitutes ...".

In many nominations in the 2004 round, as in the 2003 round, the presented plans to identify alternatives were often not adequate and future plans to phase out MB were not given. As with the 2003 round, MBTOC did not use this lack of plans as a basis to 'not recommend' a nomination.

Decision Ex. I/4 considers in part the need for Parties that make "a critical-use nomination after 2005 to submit a national management strategy for phase-out of critical uses of methyl bromide to the Ozone Secretariat before 1 February 2006".

2.5 Registration and regulatory restrictions

Similar to when considering CUNs in the 2003 round, MBTOC recognised that registration and local regulations can be constraints on the availability of particular chemical alternatives to the end user, in the sense of Decision IX/6, and thus form grounds for recommending a CUE if no other suitable alternatives are available.

Registration status of chemical alternatives varies from country to country, although some alternatives are widely registered. Registration may also vary within countries. The differing registration status of two specific key chemical alternatives, 1,3-dichloropropene (1,3-D) and chloropicrin (Pic), sometimes resulted in different evaluations in otherwise similar uses of MB for nominations from different Parties.

In certain countries, states or regions, regulatory restrictions such as buffer zones or township caps apply to some chemical fumigants. In cases where buffer zones are the same size for both MB and alternatives, the buffer zones are not relevant to the consideration of CUEs. However, MBTOC considers the continued use of methyl bromide justified under the criteria in Decision IX/6 in a few cases where buffer

zones are larger for an alternative fumigant than for MB, provided that no other effective alternatives can be used in this situation. The same reasoning applies to township caps.

Uncertainties in the registration status and long term availability of both MB and some key chemical alternatives and potential impact on nominations for CUEs have been discussed previously (TEAP 2003a, TEAP2003b, 2004).

2.6 Suggested adjustments to nominated quantities

2.6.1 Adjustments to standard dosage rates

Decision IX/6 states in part that ‘critical uses should be permitted only if ‘all technically and economically feasible steps have been taken to minimise the critical use and any associated emission of methyl bromide’. In its evaluations MBTOC assessed CUNs where possible for appropriate MB application rates and deployment of MB emission reduction technologies, such as use of barrier films or other appropriate sealing techniques.

In the soils sector, some CUNs involve the use of MB apparently with polyethylene sheeting (tarping). This process is known to lead to high rates of emission of MB in the absence of other measures such as deep injection. MB use and emission rates can be reduced substantially through use of less pervious tarping, such as VIF (Virtually Impermeable Film) or equivalent sheets, allowing increased retention of MB, extended effective exposure periods, and reduced MB application rates compared with use of conventional sheeting.

As in the evaluations of the 2003 nomination round, MBTOC reduced quantities of MB in particular nominations to a standard rate and expected that VIF or similar barrier films would be used to retain gas effectively and allow extended exposures. MBTOC considers the maximum MB application rate, on its own, of either 350 kg/ha (warm sandy soils) or 450 kg/ha (heavier cool soils), in conjunction with VIF or equivalent, combined with extended exposure periods, as effective in most circumstances when well applied. In cases where use of high chloropicrin-containing mixtures (approximately MB:Pic/67:33) were feasible, dosage rates of 200 kg MB/ha were regarded as reasonable.

The indicative rates used by MBTOC were maximum rates, for the purpose of calculation only. MBTOC recognises that the actual rate appropriate for a specific use may vary with local circumstances, soil conditions and the target pest situation. Some nominations were based on rates lower than these indicative rates, but did not use barrier film technology to reduce emissions.

Quantities in CUNs were recalculated to conform to these specifications, including use of VIF or equivalent. Reductions were not made if the Party provided a substantive argument otherwise (e.g. unusually tolerant pests) or there were regulatory requirements to use specific rates.

As noted in (TEAP 2004), use of VIF or similar barrier films results in better retention of methyl bromide compared with polyethylene tarps. Appropriate worker safety and other protective measures need to be in place to avoid unacceptable and unexpected exposures. In some jurisdictions, use of VIF or equivalent films are restricted. Most of the problems with use of VIF described in the 2002 MBTOC Assessment Report have now been overcome. VIF are in routine use in several countries and are under evaluation elsewhere.

In commodities/ structures it is feasible to reduce MB use and emissions by the use of improved sealing techniques, monitoring to ensure only the effective dose is used, and longer exposure periods. In general the average dosage rates quoted in the CUNs, typically around 20 g/m³ for mills and similar structures, are reasonable.

2.7 Rate of adoption of alternatives

MBTOC recognised that the need for time to effect phase-in/scale-up of alternatives is a reasonable technical argument for lack of availability to the end user sensu Decision IX/6. Several CUNs in the 2003 round argued that, though alternatives were potentially available, time was required to allow the relevant industry to transition to these alternatives. Some CUNs showed a reduction in nominated quantity between that for 2005 and 2006, reflecting progressive adoption of alternatives, while others had the same or similar quantities of MB nominated for both years, despite the availability of alternatives. In some cases the alternatives were identified in the CUN and in others they were identified by MBTOC.

Several CUNs in the 2003 round contained information that showed the transition away from MB had not started sufficiently early to achieve orderly change to the alternative(s) to meet the 2005 phaseout schedule under the Protocol.

There is limited guidance and data available on what is a reasonable rate of transition to existing and available alternatives. Where nominations for substantial and complex industries were made for both 2005 and 2006 that showed phase-in of alternatives, this typically showed a change of 10-20% reduction of MB use between the two years.

Experience in Multilateral Fund projects has shown that very large numbers of MB users can be trained in the use of alternatives in one year, and that the installation and adoption of alternatives (even not-in-kind alternatives) can occur rapidly when well-organised training and technology transfer programs are implemented. In the first year of a project in Argentina, for example, about 3000 farmers were trained in the effective use of MB alternatives, alternative systems were installed on these farms, and as a result the MB consumption in this sector was reduced quickly and substantially.

MBTOC observed that, with the diversity of industries concerned and lack of detailed data on feasible rates of transition, each CUN should be evaluated according to its specific circumstances.

Where a Party requested a similar quantity in 2006 compared to 2005, and giving consideration to Decision Ex. I/3(7), TEAP advised MBTOC to adopt the following interim schedule guidelines (Section 2.7.1). Adjustments to CUNs were to be considered for situations where MBTOC recognised existing technically feasible alternatives were available and where, in the absence of indications from the Party, there were no regulatory or other reasons preventing reductions.

TEAP forwarded the advice on the interim approach to the MBTOC for their consideration and comment. Consensus was not reached within MBTOC on the approach or possible modifications in the time available for consideration.

In response, MBTOC adopted the lowest suggested TEAP phase-in schedule, typically at 20%, and applied it to 7 CUNs that had been evaluated as ‘unable to assess’ at the MBTOC meeting of 28 March-1 April 2004.

2.7.1 TEAP advice on phase-in rates for CUE evaluations – 2004 round

Under the terms of Decision Ex. I/4 (3), each Party, which makes a critical-use nomination after 2005, will submit a national management strategy for methyl bromide phaseout. Each management plan will include estimates of annual market penetration of alternatives to bring forward the time when it is estimated that methyl bromide consumption for such uses can be reduced and/or ultimately eliminated.

Until such detailed management plans are available, TEAP has instructed the MBTOC to use the implementation guideline schedules for initially-granted CUEs given in Table 2-1.

Table 2-1: Estimated implementation schedules of alternatives

MB use sector	Long registered and locally implemented	Long registered and implemented elsewhere, first local implementation	Newly registered, first implementation worldwide
Preharvest	2 to 4 years	2 to 4 years	3 to 5 years
Postharvest	1 year	1 to 2 years	1 to 4 years
Structural	1 year	2 to 3 years	1 to 3 years

Successful implementation of alternatives typically has a conservative first-year penetration, followed by rapid expansions, and then more gradual phaseout completion. TEAP has instructed MBTOC to use the standard annual non-linear

reduction rates, given in Table 2-2, in cases where Parties do not submit specific information on the rate at which alternatives phase out methyl bromide.

Table 2-2: Projected annual reduction rates from initial CUEs by end of specified year

Implementation	Year 1	Year 2	Year 3	Year 4	Year 5
1-year	100%				
2-year	40%	100%			
3-year	30%	50%	100%		
4-year	20%	50%	80%	100%	
5-year	20%	45%	70%	90%	100%

MBTOC will specify projected implementation schedules and annual reduction rates consistent with the circumstances of each recommended nomination and will solicit comments from nominating Parties in subsequent nominations and progress reports.

3 Outcome of interim evaluations of CUNs – 2004 round

CUNs totalling 15429 metric tonnes were received from 16 Parties for 2006. New or additional nominations for 2005 totalled 2619 tonnes. There were 112 CUNs evaluated by MBTOC. These were for either 2005 or 2006, or for both. Of the nominations for 2005, 48 nominations for 781 tonnes in total were new, there were 9 deferred nominations from the 2003 round and 8 nominations, 640 tonnes, were for additional quantities of MB to the quantity authorised for 2005. There were 4 Parties that submitted nominations for 2005 that did not submit nominations in the 2003 round, and one Party withdrew its CUNs in 2003 and, as expected, submitted revised CUNs in the 2004 round. Part of one nomination from the 2003 round was resubmitted for further consideration.

MBTOC evaluated the CUNs submitted in 2004 on the basis of the original application, taking into account the decisions of the ExMOP, particularly in regard to the CUE quantity authorised for 2005 and with reference to CUNs from the 2003 round, where necessary.

MBTOC classified nominations into three categories based on criteria of technical and economic feasibility as instructed by Parties and elaborated in the CUE handbook, and in accordance with Decision Ex. I/5(7):

- ‘recommended’ - information contained in the nomination or available to MBTOC (and consistent with the MBTOC Assessment reports) documents that the nominated use satisfies the criteria of ‘critical’ within the context of Decision IX/6.
- ‘not recommended’ - MBTOC determined that there are technically and economically feasible alternatives available to the user for the nominated use.
- ‘unable to assess’ - information contained in the nomination or available to MBTOC was insufficient to evaluate the nomination according to the criteria of Decision IX/6.

Of the 112 CUNs under consideration, MBTOC recommended partially or in full 69 nominations, did not recommend 8 nominations and was unable to assess 35 nominations. Further information is being sought from the nominating Parties to assist evaluation of CUNs in the ‘unable to assess’ category.

Table 3-1: Summary of nominations and evaluations – 2004 round of nominations

Nominations for 2005 (metric tonnes)				
Party	Nomination	Recommended	Not recommended	Unable to assess
Australia	1.9	1.9		
Belgium	14.125	11.665	0.15	1.7
Canada	6.84	6.84		
France	95.135	7.673	15	70
Germany	45.25	45.25		
Greece	59.76			59.76
Israel	1117.944	926	5.5	56
Italy	165.5			165.5
Japan	464	205.8	142.3	115.8
Netherlands	0.12		0.12	
New Zealand	95.085	8	1.085	84
Poland	45	45		5
Switzerland	8.7	8.7		
UK	6.33	6.33		
USA	493.253		14.594	478.658
Totals	2619	1274	179	1036

Nominations for 2006 (metric tonnes)				
Party	Nomination	Recommended	Not recommended	Unable to assess
Australia	116.9	43.5		58
Belgium	0.3	0.3		
Canada	53.90	44.85		
France	513.135	133.165	15	356
Israel	1082.944	835	5.5	50
Italy	2430.5	536		1685.5
Japan	655.5	323.9	142.3	189.3
New Zealand	95.085	8	1.085	84
Poland	44.38	40		
Spain	955.89	942		4.38
Switzerland	7	7		
UK	74	6		68
USA	9399.259	1714.215	20.543	7354.384
Totals	15429	4634	184	9850

Interim evaluations of each CUN, and of the one CUN submitted for reconsideration at the ExMOP, are given in detail in Annex 1. Annex 1 presents the CUNs by Party and use, including the reasons why particular CUNs are placed in the ‘unable to assess’ category.

On some occasions MBTOC has suggested quantities of MB for 2005 or 2006 different from the ones nominated. Grounds used for these changes are given in Section 2.6.1 above and in detail after the relevant CUNs in Annex 1.

Details of evaluations are summarised by Party in Table 3-1.

4 Issues arising in the review of CUNs

Two particular groups of CUN were of concern to MBTOC during the course of the evaluation of both the 2003 and 2004 round of nominations. These involved nominations for a CUE for specific uses of MB in production of nursery or propagation stock, including strawberry runners, and for orchard replant. There is potential for continuing nominations for these uses unless performance data becomes available to show one or more of the many apparent alternatives are feasible in the particular production systems involved. The alternative(s) should meet satisfactory practical industrial standards of economic and technical performance.

4.1 Nursery stock

A substantial number of CUNs requested a CUE for retention of MB for treatment of soils use for production of nursery stock to provide 'disease free' material for cropping industries (e.g. strawberries, fruit trees, forestry). Many of these nominations were based on the stated need for 'disease free' stock that required production in fumigated soils (mandatory MB or not). Some nominations were for production of propagation material that was required to meet government or industry certification standards for 'disease free' plants. In general, no data was provided on whether alternatives were able to produce 'disease free' material adequately, or whether appropriate levels of crop or commodity performance were achieved when compared to MB.

To date, MBTOC has tended to recommend CUEs for many nursery stock CUNs, after consideration of the specific circumstances of the nomination. It would be of assistance in future evaluations if nominating Parties were to provide more detailed data on comparative disease tolerance levels and in field crop growth and performance for nursery stock treated with different alternatives and planted into subsequent cropping systems.

4.2 Replant Disease

Several CUNs have requested a CUE for continued use of MB for orchard replant disease, often without knowing the full range of pests being involved or without clear clarification of the target problem requiring treatment specifically with MB. In this situation, MBTOC accepted the Parties claim that alternatives were not available, however future nomination may clearly specify the major target pests, and provide comparative growth performance or disease levels on crops over an extended (3 years) period to support the nomination.

5 References

- TEAP 2003a**, Report of the Technology and Economic Assessment Panel, May 2003, Progress Report, UNON Nairobi, ISBN 92-807-2335-9
- TEAP 2003b**, Report of the Technology and Economic Assessment Panel, October 2003, Critical Use Nominations - Supplementary Report, UNON Nairobi, ISBN 92-807-2375-8
- TEAP 2004**, Report of the Technology and Economic Assessment Panel, 14 February 2004, Critical Use Nominations - 2004 Supplementary Report, UNON Nairobi, ISBN 92-807-2425-8

Annex 1: Evaluation of Critical Use Nominations, 2004 Round of Nominations

Party	MBTOC reference number(s)	Industry	Approved quantity (metric tonnes) for 2005 by EMOP (a)	Nominated quantity for 2005 in 2004 round	Nominated quantity for 2006 in 2004 round	New or additional quantity recommended by MBTOC for 2005	Quantity recommended by MBTOC for 2006	Comments by MBTOC
Australia	Au56N4	Almonds, Almondco		1.1	1.1	1.1	1.1	MBTOC recommends a CUE of 1.1 tonnes for both 2005 and 2006 for this use. Various research programmes are in place to identify possible alternatives. The need for rapid throughput restrict the potential alternatives. An economic study might be useful to identify the financial (and logistic) consequences of various possible options to create a base for a rational decision how to change the system to avoid MB use. Since mostly fumigation chambers are used, the implementation of a scrubbing system could be an option for the transition time to non MB alternatives. Rapid-acting alternative fumigants such as SF and COS are not currently registered for this commodity in Australia. It is envisaged that increased trade may lead to an increased requirement for disinfection.
Australia	Au56N5	Almonds, Kyndalyn		0.8	1	0.8	1.0	MBTOC recommends a CUE of 0.8 tonnes for 2005 and of 1.0 tonnes for 2006 for this use. The need for rapid throughput restrict the potential alternatives. Experiments with an alternative fumigant (VAPORMATE) are in progress. Positive results could lead to pronounced reduction of MB use. Heat and phosphine (ECO2FUME) is considered to offer an alternative if short lethal exposure can be established. Since mostly fumigation chambers are used, the implementation of a scrubbing system could be an option for the transition time to non MB alternatives.
Australia	Auc6N1	Cut flowers - Queensland	18.375 + 10.425		58		U	MBTOC is unable to assess this CUN for 2006. MBTOC finds that this CUN is not significantly different from the one presented in the 2003 round that was allocated a CUE of 10.425 tonnes (protected) and 18.375 tonnes (open field) for 2005 at the EMOP. MBTOC recommended this quantity on the basis of a guideline dosage rate of 450 kg/ha with VIF and that time was required for scaleup of alternatives. Party is requested to update on progress in technical trials and adoption of the use of alternatives, including substrate production, MB/Pic mixtures (e.g. 70:30, 50:50) and 1,3-D/Pic.
Australia	CUN2003/003, Auc6N2	Cut flowers, bulbs - protected	7		7		5.25	MBTOC recommends a reduced CUE of 5.25 tonnes for 2006 for this use. The reduction is based on scaling the application rate from 600 to 450 kg/ha as a result of use of VIF. Not all crops can be successfully grown in substrates and chemical fumigant alternatives are presently considered unsuitable under the specific circumstances of the nomination (steeply sloping ground). Party is requested to provide an update on progress in technical trials and adoption of the use of alternatives. MBTOC recognizes that steam may be expensive but negative pressure steaming is a cheaper option that may suit a proportion of that requested.
Australia	CUN2003/004, 6, Auc6N6	Rice (consumer packs)	6.15		12.3		6.15	MBTOC recommends a reduced CUE of 6.15 tonnes for 2006 be approved for this use. This reduced quantity is on the same basis as that approved for 2005. MBTOC notes that trials are now underway as a result of MBTOC's 2005 recommendation to verify whether the reduced allocation is effective under the circumstances of the nomination.
Australia	CUN2003/006, Auc6N3	Strawberry runners	35.75		37.5		30	MBTOC recommends a reduced CUE of 30 tonnes of MB for 2006 be approved for this use. CUN has been scaled to take into account use of VIF and a maximum dosage rate of 200kgMB/ha with MB/Pic mixtures. The CUN states that MB is required to meet certification standards and that a key alternative, 1,3-D/Pic, is reported to have been phytotoxic due to the heavy and wet soil conditions. The CUN provided recent data from a specific local trial indicated phytotoxicity in runners that result in doubling the time required before planting compared to MB. Although 1,3-D/Pic is considered a promising alternative to MB in strawberry runner production, further research is required on the effects of this alternative. The CUN states that plug plants are a technically feasible alternative but that the costs associated with this technology are regarded as too high. The Party is already using a lowered rate of MB, 250 kg/ha, and is examining the efficacy of 30:70 mixtures of MB/Pic. MBTOC considers that difficulties in using VIFs on a broadacre basis to reduce emissions can be overcome, leading to further reduced usage of MB.
Belgium	B5-N2	Mills		0.2		0.2		MBTOC recommends a CUE of 0.2 tonnes for 2005 for this use. MBTOC commends the party for adoption of alternatives minimising the use of MB for this application.
Belgium	B5-N3	Objects, antiques, books, furniture		0.15		N		MBTOC does not recommend this CUN. There are various alternatives available for all the applications in this CUN e.g. humidified nitrogen, gamma irradiation, use of cold (MBTOC 2002, Reichmuth 2001)

Party	MBTOC reference number(s)	Industry	Approved quantity (metric tonnes) for 2005 by EMOP (a)	Nominated quantity for 2005 in 2004 round	Nominated quantity for 2006 in 2004 round	New or additional quantity recommended by MBTOC for 2005	Quantity recommended by MBTOC for 2006	Comments by MBTOC
Belgium	B5-N4	Electronic equipment		0.1		U		MBTOC is unable to assess this CUN. The Party is requested to provide information on why are the equipment becomes infested and the conditions involved, on what insects are the reason for the treatment and the circumstances of fumigation, where is the equipment located and any other information that will assist the MBTOC in evaluating this nomination.
Belgium	B5-N5	Woodworking premises		0.3		0.3		MBTOC recommends a CUE of 0.3 tonnes for 2005.
Belgium	B56N6	Food premises		0.3	0.3	0.3	0.3	MBTOC recommends a CUE of 0.3 tonnes for both 2005 and 2006 for this use. MBTOC commends the party for adoption of alternatives minimising the use of MB and encourages further adoption of non-MB control measures.
Belgium	B5-N7	Food storage (dry) structure		0.12		0.12		MBTOC recommends a CUE of 0.12 tonnes for 2005 for this use. MBTOC commends the party for adoption of alternatives minimising the use of MB.
Belgium	B5-N8	Old buildings		0.7		0.7		MBTOC recommends a CUE of 0.7 tonnes for 2005 for this use. MBTOC recognises that in the absence of registration of alternative fumigants, e.g. SF, that do not corrode electrical components, an infested wooden house with electrical wirings may need MB for treatment.
Belgium	B5-N9	Textiles		0.1		U		MBTOC is unable to assess this CUN. The Party is requested to provide information on the following to allow an evaluation to be made: why it is not feasible to treat fabric with inert gases, including under pressure, with cold or with insecticide impregnation, how fabric becomes infested with insect pests and where does infestation occur, e.g. in the manufacturing company or in houses and why IPM strategies typically used in similar situations to prevent the facilities from becoming infested are not sufficient to prevent infestation in this case. Evidence is requested that, in this particular situation, phosphine treatment and proper airing leaves unacceptable odours, whereas MB treatment does not.
Belgium	B5-N10	Empty silo		0.05		0.05		MBTOC recommends a CUE of 0.05 tonnes for 2005 for this use. MBTOC commends the Party for adoption of alternatives minimising the use of MB.
Belgium	B5-N11	Food processing premises		0.03		0.03		MBTOC recommends a CUE of 0.03 tonnes for 2005 for this use.
Belgium	B5-N12	Old buildings		0.45		0.45		MBTOC recommends a CUE of 0.45 tonnes for 2005 for this use. MBTOC recognises that in the absence of registration of alternative fumigants, e.g. SF, that do not corrode electrical components, infested buildings with electrical wirings may sometimes need MB for treatment.
Belgium	B5-N13	Antique furniture		0.75		U		MBTOC is unable to assess this CUN. MBTOC recognizes that MB is sometimes needed for treatment of fungi (and insects in some cases) in historical structures and some artefacts. On the other hand, there are numerous alternatives for movable historical antique furniture. In Germany and other countries, many historical wooden artifacts are treated successfully with controlled atmospheres (CA), freezing, sulfuryl fluoride or inert gases under vacuum. The Party is requested to provide the proportion of the requested CUN amount is for unmovable artifacts to allow an evaluation to be made. The Party is already using controlled atmospheres quite successfully, and should continue to do so. The issue of time as a constraint is not relevant since it is not a critical factor in the fumigation process for these items. Gastightness is identified as one issue for the need to use MB as compared to CA, but there are commercial processes available that adequately cope with this problem.
Belgium	B5-N14	Flour mill		0.125		0.125		MBTOC recommends a CUE of 0.125 tonnes for 2005. MBTOC commends the party for adoption of alternatives minimising the use of MB and for instituting emission controls.
Belgium	B5-N15	Flour mills		10		9.39		MBTOC recommends a CUE of 9.39 tonnes for 2005 for this use. This quantity represents the projected use for 2005 and represents a decrease from 10 tonnes which was requested in the CUN. The users are encouraged to continue improvements in IPM methods and to consider reducing the frequency of fumigation as a means of reducing MB use..
Belgium	B5-N16	Artefacts and structures		0.6		U		MBTOC is unable to assess this CUN. There may be alternatives available for at least some of the requested applications. The Party is requested to disaggregate the nomination into at least the following groupings: (1) aeroplanes (2) mills (3) artefacts, furniture and other moveable objects (4) structures, and to provide specific information on treatments and the critical need for MB, including dosage rates, exposure times, total MB requirements and analysis of alternatives for each application. With regard to moveable artefacts and furniture, an explanation is sought as to why inert gases in chambers cannot be used for disinfection.

Party	MBTOC reference number(s)	Industry	Approved quantity (metric tonnes) for 2005 by EMOP (a)	Nominated quantity for 2005 in 2004 round	Nominated quantity for 2006 in 2004 round	New or additional quantity recommended by MBTOC for 2005	Quantity recommended by MBTOC for 2006	Comments by MBTOC
Belgium	B5-N17	Antiques and buildings		0.15		U		MBTOC is unable to assess this CUN. MBTOC believes there may be alternatives available for at least some of the requested applications. The Party is requested to disaggregate the nomination and to provide specific information on treatments and the critical need for MB, including dosage rates, exposure times, total MB requirements and analysis of alternatives for each application. With regard to moveable artefacts and furniture, an explanation is sought as to why inert gases in chambers cannot be used for disinfestation. There is not enough information to support the increased MB consumption for this use compared to as compared to the most recent year of data.
Canada	Cac6N2	Pasta manufacturing facility			10.457		8.4	MBTOC recommends a reduced CUE of 8.4 tonnes for 2006 for this use. No evidence was presented that indicated that any research has been carried out to test and implement alternatives. Implementation of IPM systems should allow reduced use and frequency of MB treatments on the same basis as for the similar situation for Canadian flour mills in 2006.
Canada	Cac6N1	flour mills			34.774		27.8	MBTOC recommends a reduced CUE of 28 tonnes for 2006 for this use. The applicant states that Canadian mills are in the process of expanding and intensify their IPM and heat programs. A significant reduction in the amount of MB required in 2006 should be achievable.
Canada	Ca5-N4	Strawberry runners (PEI)		6.840	6.840	6.840	6.840	MBTOC recommends a CUE of 6.84 tonnes for both 2005 and 2006 for this use. A CUE of 7.952 tonnes was approved at EMOP. This nomination is for strawberry runners for which national regulatory controls are in place in both the nominating Party and the Parties that receive shipment of this material. The Party may wish to consider whether part or all of this CUN falls under QPS use of MB. MBTOC acknowledges that the recent ban of 1,3-D in the nominated region is a significant impediment to the Party in the transition away from MB. The Party is urged to consider use of reduced rates of MB as MB/Pic (50:50) with VIF as a transition strategy.
Canada	CUN2003/009, Cac6N3	Strawberry runners (Quebec)			1.826		1.826	MBTOC recommends 1.826 tonnes for 2006 for this use. A CUE of 7.952 tonnes was approved at EMOP for 2005 for Canadian runner production that included this use. No trials data on alternatives in Canada was submitted to support this CUN. The Party may wish to consider whether part or all of this CUN falls under QPS use of MB. This nomination is for strawberry runners for which national regulatory controls are in place in both the nominating Party and the Parties that receive shipment of this material, but MB treatment is not a mandatory requirement for export. The Party is urged to consider use of reduced rates of MB as MB/Pic (50:50) with VIF as a transition strategy.
France	CUN2003/010, Frc6N1	Carrots	8		8		8	MBTOC recommends a CUE of 8 tonnes for 2006 for this use. MBTOC acknowledges the situation in this CUN appears unique, both in growing situation and critical pathogens. Carrots are grown worldwide without use of MB. Some trials with potential alternatives have been carried out but no research appears to have been conducted since 2001/02. The alternatives tested did not control a particular, important pest satisfactorily.
France	CUN2003/012, Frc6N13	Chestnuts	2.0		2.0		2.0	MBTOC recommends a CUE of 2.0 tonnes for 2006 for this use. No progress in developing alternatives have been reported and MBTOC does not recognise any available alternatives for this specific use. There may be scope for reduction of the high dosages of MB used at present.
France	CUN2003/013, Frc6N2	Cucurbits - protected and field		70	70	U	U	MBTOC is unable to assess this CUN. Information is requested on whether a reduction in the CUN can be considered based on the use of 450 kg/ha with VIF, which MBTOC considers should be effective for disease control in general for pest control in cool conditions with heavy soils. A CUE is presently requested for 116 ha, at the dosage of 600 kg/ha. MBTOC recognizes that <i>Phomopsis sclerotoides</i> is difficult to control with the limited alternatives available in France. MBTOC notes that elsewhere alternatives are available for this disease, especially fumigant combinations containing chloropicrin. A large proportion, 75%, is produced in soilless culture, but at present adoption by the remaining industry is considered uneconomic. A progressive implementation of substrate adoption is anticipated.
France	CUN2003/016, Frc6N8	Cut flowers, bulbs - protected and open field	60		70		U	MBTOC is unable to assess this CUN. MBTOC considers that technical and economic validation of alternatives is insufficient. The Party is requested verify why a reduction in the CUN cannot be considered based on the use of 450 kg/ha with VIF, which MBTOC considers should be effective for disease and weed control in the circumstances. A reduction in the CUE should also be considered based on the increased adoption of substrates. Conversion to production of crops in substrates has been identified as a technically feasible alternative (UNEP 2004), but time will be required to convert some crops. This CUN is not significantly different from the one requesting an exemption in 2005, but includes an increase of 10 tonnes over the reduced CUE of 60 tonnes approved by the EMOP.

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France	Frc6N3	Eggplant			32.5		U	MBTOC is unable to assess this CUN. Very similar CUNs have been made by this Party for eggplant, peppers and tomatoes, though pest effects and incidence, and economics of the alternatives will vary with the crops. Specific data on critical need for MB is requested for eggplant. Products containing chloropicrin are not currently registered in France, limiting the practical availability of some recognised alternatives. Soilless culture is considered uneconomic in the CUN. Party is requested to provide better justification as to why substrates are not suitable for at least some of the production. The use of resistant varieties and rootstocks is limited by races occurrence and by others factors such as temperature. Rates of MB recommended labelled for use in France are 750, 600, 500 and 400 kg/ha respectively for <i>Phomopsis</i> , corky root, other pests and nematodes, but the CUN appears to be based on the maximum dosage without adjustment for the incidence and levels of particular pathogens. Clarification is sought if the CUN can be revised to take into account adoption of VIF, preferably as a strip treatment, with rates of 450 kg/ha MB or less.
France	CUN2003/014, Frc6N4	Forest nurseries	10		10		10	MBTOC recommends that a CUE of 10 tonnes be approved for this use. The CUN considers chloropicrin and/or DMDS might be alternatives although they are not registered in France and effective weed control needs to be established. Party may wish to include lower cost plate steaming or steaming/soilless culture technologies into the research program. Party is requested to provide more detailed data in future nominations on crop performance using alternatives, especially disease tolerance data of commodities or growth performance data for stock planted into cropping fields.
France	Frc6N7	Melon		10	10	7.5	6.0	MBTOC recommends a reduced CUE of 7.5 tonnes for 2005 and a further reduced CUE of 6.0 tonnes for 2006 for this use. The reductions are based on a reduced average dosage rate to 450 kg/ha with VIF and progressive implementation of alternatives. Alternatives such as grafting and specialised mulch plastics are already commercialised alternatives in similar production regions. Registration of chloropicrin-containing alternatives would increase range of options for this crop.
France	CUN2003/012, Frc6N14	Mills and Processors	40		40		35	MBTOC recommends a reduced CUE of 35 tonnes for this use. The reduction is to the historical average level of usage and recognising that some savings in methyl bromide can be made through reduced dosages combined with better sealing techniques. Use of MB is restricted to <18% of mills in France that cannot use presently available alternatives.
France	CUN2003/017, Frc6N5	Orchard and raspberry - replant	25		25		25	MBTOC recommends a CUE of 25 tonnes for 2006 be approved for this use. The CUN is for the same quantity as for 2005. MBTOC recognizes that perennial crop replant disease is a problem for which alternatives to MB may not be adequately proven. MBTOC also acknowledges that the request is a substantial (55%) reduction from the amount used in 2000. Orchard is strip treated at a reduced rate under VIF. The main constraint to the adoption of alternatives is the inability to identify definitively what is causing replant disease and implement appropriate response. The Party states MB is used only where high nematode and fungal pathogens exist. Nematode problems without fungal problems are managed with 1,3-D. Moderate nematode and fungal populations are managed with 1,3-D combined with dazomet. One potential alternative for some situations, chloropicrin, is not registered in France.
France	CUN2003/015, Frc6N6	Orchard and raspberry nurseries	5		5		5	MBTOC recommends a CUE of 5 tonnes for 2006 be approved for this use. The CUN is for the same quantity as for 2005. MBTOC's 2002 Assessment identified the level of disinfestation required for nursery certification as a problem for which alternatives to methyl bromide are generally inadequate. MBTOC encourages the Party to conduct research under nursery conditions, instead of relying on data extrapolated from orchard replant research trials. MBTOC further encourages the Party to provide more detailed information on pathogen levels on plants (pathogen tolerance) for those pathogens subject to certification requirements as a part of these research trials, as well as measuring plant vigor. Dazomet has resulted in less vigor than treatment with MB in past trials. 1,3-D is effective only when nematodes are the only pathogen, but not sufficient when pathogenic fungi are also present. One potential alternative for some situations, chloropicrin, is not registered in France.
France	Fr56N15	Peat		15	15	N	N	MBTOC does not recommend this CUN. At least one effective alternative is in routine commercial use. Soil pasteurisation with steam is widely used for substrate disinfestation in many neighbouring countries (Netherlands, Germany, etc.) and soil pasteurisation is well adapted for substrate disinfestation. The quantity to be fumigated is about 28,000 m ³ /year. This volume represents less than 6 ha of soil (60,000 m ² x 0.5 m depth).

Party	MBTOC reference number(s)	Industry	Approved quantity (metric tonnes) for 2005 by EMOP (a)	Nominated quantity for 2005 in 2004 round	Nominated quantity for 2006 in 2004 round	New or additional quantity recommended by MBTOC for 2005	Quantity recommended by MBTOC for 2006	Comments by MBTOC
France	Frc6N9	Peppers (o/p)			32.5		U	MBTOC is unable to assess this CUN. Very similar CUNs have been made by this Party for eggplant, peppers and tomatoes, though pest effects and incidence, and economics of the alternatives will vary with the crops. Specific data on critical need for MB is requested for peppers. Products containing chloropicrin are not currently registered in France, limiting the practical availability of some recognised alternatives. Soilless culture is considered uneconomic in the CUN. Party is requested to provide better justification as to why substrates are not suitable for at least some of the production. The use of resistant varieties and rootstocks is limited by race occurrence and by others factors. Rates of MB recommended labelled for use in France are 750, 600, 500 and 400 kg/ha respectively for Phomopsis, corky root, other pests and nematodes, but the CUN appears to be based on the maximum dosage without adjustment for the incidence and levels of particular pathogens. Clarification is sought if the CUN can be revised to take into account adoption of VIF, preferably as a strip treatment, with rates of 450 kg/ha MB or less.
France	CUN2003/012, Frc6N16	Rice (consumer packs)	2.0		2.0		2.0	MBTOC recommends that a CUE of 2.0 tonnes be approved for 2006 for this use. This is on the same basis as approved for 2005 by the EMOP. There appears to be scope for reduction in MB usage via slight increases in exposure time. The Party did not provide full information on what conditions result in use of MB, whether MB was used only with evidence of pest infestation and whether IPM or other methods that might reduce need for MB.
France	Fr56N17	Seeds (postharvest)		0.135	0.135	0.135	0.135	MBTOC recommends a CUE of 135 kg for both 2005 and 2006 be approved for this use. MBTOC agrees there are no alternatives in the specific situation for control of insects in large bulks of seeds when very rapid turn around is required for immediate planting.
France	CUN2003/019, Frc6N11	Strawberry runners	40		40		40	MBTOC recommends a CUE of 40 tonnes for 2006 be approved for this use. France has a reduced range of alternatives available because products containing chloropicrin are not registered. They are currently under review by national authorities. Remaining alternatives available to the Party do not appear to provide equivalent yield performance compared to MB. The Party indicates that 350 and 400 kg/ha of MB are effective in controlling soilborne pests in research results. Many Parties use 400 kg/ha or lower dosage rates for similar circumstances. However, the Party indicates that 500 kg/ha are required by the national authorities to control soilborne pests and 400 kg/ha are required for treatment of nematodes. The CUN appears to be based on the maximum dosage without adjustment for incidence and levels of particular pathogens. Clarification is sought if rates can be revised to take into account adoption of VIF, preferably as a strip treatment.
France	CUN2003/020, Frc6N10	Strawberry fruit - protected and open field	90		86		U	MBTOC is unable to assess this CUN. MBTOC considers that several other alternatives are technically suitable for strawberry fruit production, however the lack of registration of Pic in France means that there is a reduced range of alternatives available compared to other countries. The Party is requested to clarify why 1,3-D in combination with metham is not considered effective. MBTOC acknowledges France's efforts to phase-out MB for this sector through the adoption of soilless cultivation.
France	Frc6N12	Tomato			65		U	MBTOC is unable to assess this CUN. Very similar CUNs have been made by this Party for eggplant, peppers and tomatoes, though pest effects and incidence, and economics of the alternatives will vary with the crops. Specific data on critical need for MB is requested for tomatoes. Products containing chloropicrin are not currently registered in France, limiting the practical availability of some recognised alternatives. Soilless culture is considered uneconomic in the CUN. Party is requested to provide better justification as to why substrates are not suitable for at least some of the production. The use of resistant varieties and rootstocks is limited by races occurrence and by others factors such as temperature. Rates of MB recommended labelled for use in France are 600, 500 and 400 kg/ha respectively for corky root, other pests and nematodes, but the CUN appears to be based on the maximum dosage without adjustment for the incidence and levels of particular pathogens. Clarification is sought if the CUN can be revised to take into account adoption of VIF, preferably as a strip treatment, with rates of 450 kg/ha MB or less.
Germany	D5-N1	Artefacts		0.25		0.25		MBTOC recommends that a CUE of 250 kg be approved for 2005 for this use, specifically fungal control in artefacts that are attached to interiors of historical buildings. Use of MB is minimised by sheeting off the specific zone that requires treatment and emission control measures in place as required by regulation. A research program for alternatives is in place. CO2 will only control growth of fungi and does not kill fungi. SF not effective. MBTOC agrees there are no alternatives for control of fungi for unmovable historical artefacts.

Party	MBTOC reference number(s)	Industry	Approved quantity (metric tonnes) for 2005 by EMOP (a)	Nominated quantity for 2005 in 2004 round	Nominated quantity for 2006 in 2004 round	New or additional quantity recommended by MBTOC for 2005	Quantity recommended by MBTOC for 2006	Comments by MBTOC
Germany	D5-N2	Mills and Processors		45		45		MBTOC recommends that a CUE of 45 tonnes be approved for 2005 for this use. MBTOC requests the Party to use best practices to reducing emissions and improved IPM practices to reduce use of MB where possible. MBTOC suggests that the Party continue to investigate improvements to heat treatment methods to improve results for larger mills.
Greece	Gr5-N1	Cut flowers		32.48		U		MBTOC is unable to assess this CUN. The nomination does not state what alternatives are in place in 80% of total crop area or why MB is critical for the remaining 20%. Feasible alternatives such as soilless culture are in place in a portion of cropping area but the CUN does not state why adoption cannot be further expanded. A more detailed technical and economic analysis is requested to substantiate the critical need for MB for this use.
Greece	Gr 5-N2	Commodity Dried fruit		4.28		U		MBTOC is unable to assess this CUN. The applicant states that the basis for the quantity of MB requested is into comply with existing national and EU regulations. MBTOC requests the party to provide more information and clarification on the regulations quoted and specifically provide information on whether or not MB is cited in the regulation as the only approved treatment. MBTOC recognises that alternatives are available for most of the uses applied for.
Greece	Gr5-N3	Mills and Processors		23		U		MBTOC is unable to assess this CUN. The CUN only contains estimated amounts for several years and increased MB use is requested. MBTOC requires detailed information on location, volume, frequency of fumigation and historical usage data of each individual mill and plant that is included in this application to allow an evaluation to be made. MBTOC requests the Party to use best practices to reducing emissions and improved IPM practices to reduce use of MB where possible. The applicant is requested to provide information on the reduction in MB use expected as a result of use of heat treatment and other alternatives for mills as in commercial use in numerous other countries.
Israel	CUN2003/022, Is56N3	Cut flowers - protected		308	308	240	240	MBTOC recommends that a reduced CUE of 240 tonnes be approved for both 2005 and for 2006 for this use. This is on the basis that alternatives are unavailable for use because of regulatory issues, but that a reduced MB dosage is likely to be effective. The nominated quantity has been scaled to be consistent with the use of VIF films and a rate of 350 kg/ha2 for 98:2 [shank injected applications] which has been shown to be effective in similar sandy soil types in the region. MBTOC recognises efforts made by the Party to reduce MB usage in the past.
Israel	Is56N5a	Cut flowers - open field		77	67	60	52	MBTOC recommends that a reduced CUE of 60 tonnes be approved for 2005 and 52 tonnes for 2006 for this use. This is on the basis that alternatives are unavailable for use because of regulatory issues, but that a reduced MB dosage is likely to be effective. The nominated quantity has been scaled to be consistent with the use of VIF films and a rate of 350 kg/ha for 98:2 (shank injected applications) which has been shown to be effective in similar sandy soil types in the region. MBTOC notes that there are chemical alternatives in general, including MB/Pic 70:30 or 50:50, for cut flower production. MBTOC recognises efforts made by the Party to reduce MB usage in the past.
Israel	Is5-N1a	Dates (postharvest)		3.444	3.444	3.444	2.755	MBTOC recommends that a CUE of 3.444 tonnes be approved for 2005 and a reduced CUE of 2.755 tonnes for 2006 for this use. MBTOC recognises that the applicant has described a phase out plan for 2006 or 2007, and that this request is specifically for a transition period. The CUN for 2006 has been reduced to allow for progressive phasein of alternatives.
Israel	Is56N2	Fruit tree nurseries		50	45	50	45	MBTOC recommends a CUE for 50 tonnes for 2005 and 45 tonnes for 2006 of MB be approved for this use. MBTOC recognizes the importance of clean propagative material and MBTOC's 2002 Assessment has identified the level of disinfestation required for nursery certification as a problem for which alternatives to methyl bromide are generally inadequate. MBTOC further recognizes the effort to move to a containerised growing system ("detached bags") that does not require methyl bromide. Grape nurseries have moved 100% to this technology. Quality problems using this technology for apple seedlings which hampers the further expansion of this technology are being investigated. Other chemical alternatives (e.g. 1,3-D, metham sodium, Aldicarb, fenamiphos and cadusafofos) are either not registered or insufficiently effective.
Israel	CUN2003/022, Is56N4	Melon -protected & field		148	142	103.6	99.4	MBTOC recommends that a reduced CUE of 104 tonnes be approved for 2005 and 99 tonnes for 2006 for this use. The CUN has been adjusted to utilise a rate of 350 kg/ha under VIF. There may be scope for further reduction through implementation of strip fumigation. MBTOC requests to the Party clarify proportion of the nomination impacted by buffer zones. MBTOC notes that there are chemical alternatives in general (MB/Pic 70:30, or 50:50) for melon production but that registration issues may prevent the use of these in this particular circumstance. MBTOC suggests adoption of grafting beyond 2006.

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Israel	CUN2003/022, Is56N6	Potato		239	231	239	165	MBTOC recommends a CUE for 239 tonnes for 2005 and a reduced CUE of 165 tonnes for 2006 of MB be approved for this use. There is a complex disease issue. The reduction for 2006 is based on scaling the original quantity nominated to a dosage of 250 kg/ha, that the applicant has suggested may work for them. The applicant identified that MB is for use only in a regional area of specialised potato production where regulatory constraints are in place for alternatives. They also indicate that there are effective control alternatives for the pest complex elsewhere. MBTOC recognises that the specific region has used MB for production of potatoes historically although potatoes are grown worldwide without MB.
Israel	Is56N7	Seed production		56	50	U	U	MBTOC is unable to assess this CUN. The need for MB is unclear and system of production not adequately defined. The CUN states that seeds must meet certification standards but many of the pests specified as targets of MB fumigation are not soilborne or carried on seeds. Due to lack of a research program, there is no explanation for lack of control with alternatives such as chloropicrin in combination with 1,3-D or MITC-generating compounds. A steam and soilless culture system is considered to be a suitable alternative and is in use for 20% of the crop. The CUN identifies economic constraints as the barrier to adoption of the non-chemical alternative but no economic analysis is provided. The Party is requested to provide an economic analysis and data supporting the inadequacy of registered chemical alternatives.
Israel	Is56N8	Silo bins		5.5	5.5	N	N	MBTOC does not recommend this CUN. There are alternatives available to achieve the same result as sought with MB. Technically, in an empty silo bin, few grains remain. Application of dichlorvos or phosphine should control the residual free-living insects on the bin walls effectively. A high turnover of grain should ensure any remaining immobile stages (eggs or pupae) are quickly eliminated through subsequent processing.
Israel	Is56N10	Strawberry runners		35	35	35	35	MBTOC recommends a CUE of 35 tonnes for both 2005 and 2006 be approved for this use. The CUN is calculated on the basis of use of 98% MB and VIF films. There may be scope for some reduction through use of MB/Pic mixtures where not precluded by large buffer zone restrictions (250 metres) due to the close proximity of farms to residential areas in the Sharon and Gaza regions. MBTOC acknowledges the Party has assessed the nominated amount using 350 kg/ha and the use of VIF. Although the Party has conducted extensive research trials on key alternatives (chloropicrin alone, Telone formulations) they are not yet registered. The Party is trialling methyl iodide as a replacement to MB.
Israel	CUN2003/022, Is56N9	Strawberries -fruit, protected and open field		196	196	196	196	MBTOC recommends a CUE of 161 tonnes for both 2005 and 2006 be approved for this use. MBTOC acknowledges that the Party provided extensive data on the alternatives and that several of the key alternatives (metham sodium, chloropicrin alone, 1,3-D formulations) are not yet registered. Fumigant mixtures containing chloropicrin are subject to large buffer zone restriction (250 meters) precluding use of such mixtures in strawberry fruit production due to the close proximity of farms to residential areas in the Sharon and Gaza regions. Data provided by the Party indicates that Basamid plus solarization performs comparably to methyl bromide and MBTOC requests that the Party indicate if a portion of strawberry fruit production may be able to use Basamid plus solarization as an alternative. MBTOC understands that solarisation alone is not feasible to implement due to a variety of constraints indicated in the CUN. The Party indicates that it is evaluating a change in their production system to suspended pots that will eliminate the need for methyl bromide by 2008 if commercially successful.
Italy	It5-N4	Artefacts		5.5	5.5	U	U	MBTOC is unable to assess this CUN. The CUN refers to both moveable and immovable artefacts. MBTOC recognizes the need for MB for some of these uses, particularly for treatments against fungi (and insects in some cases) in historical structures and some immovable artefacts. On the other hand, MBTOC recognizes numerous alternatives for movable historical wood products and historical paper material. In Germany and other countries, many historical, wooden or paper artefacts are treated successfully with controlled atmospheres, freezing, sulfuryl fluoride or inert gases under vacuum. The Party is requested to disaggregate the CUN to show the proportion of the nomination applying to movable and immovable artefacts, and to provide data on historical use in each category.

Party	MBTOC reference number(s)	Industry	Approved quantity (metric tonnes) for 2005 by EMOP (a)	Nominated quantity for 2005 in 2004 round	Nominated quantity for 2006 in 2004 round	New or additional quantity recommended by MBTOC for 2005	Quantity recommended by MBTOC for 2006	Comments by MBTOC
Italy	CUN2003/025, It-6N1	Cut flowers, bulbs - protected	250		250		187	MBTOC recommends a reduced CUE of 187 tonnes for 2006 be approved for this use. The availability of some alternatives is restricted by lack of registration of alternatives, particularly chloropicrin and chloropicrin-containing mixtures. The CUN is based on MB (98:2, hot gas, broadacre) used at rate of 500 kg/ha under VIF. The reduction of the nominated quantity is based on use of a rate of 350 kg/ha in southern Italy and 450 kg/ha in northern Italy. There appears to be scope for further reduction through introduction of alternatives, including steaming and substrate production, and use of strip fumigation.
Italy	CUN2003/023, It-6N2	Eggplant - protected	194		200		124	MBTOC recommends a reduced CUE of 124 tonnes for 2006. The reduction in nominated quantity is based on scaling the nomination to 350kg/ha from 450 kg/ha under VIF (98:2, hot gas, broadacre) and further allowed a reduction of 20% to allow for adoption of existing alternatives (e.g. Pic EC and 1,3-D used alone). There appears to be scope for further reduction through adoption of strip fumigation. Choice of alternatives is restricted by lack of registration of fumigant mixtures.
Italy	CUN2003/024, It-6N3	Melon - protected	131		135		95	MBTOC recommends a reduced CUE of 95 tonnes for 2006. The reduction in nominated quantity is based on scaling the nomination to 350kg/ha from 400 kg/ha under VIF (98:2, hot gas, broadacre) and further allowed a reduction of 20% to allow for adoption of existing alternatives (e.g. Pic EC and 1,3-D used alone). Choice of alternatives is restricted by lack of registration of fumigant mixtures. MBTOC recommends development of effective alternatives already commercialised in similar regions elsewhere, such as grafting, low dosage rates of MB/Pic, 1,3-D/Pic, metham sodium/Pic, and the use of plastic mulch and improved strip applications.
Italy	It5-N8	Mills and Processors		160	130	U	U	MBTOC is unable to assess this CUN. There are several alternatives that could probably be implemented during 2005 and 2006 to reduce MB use for at least some of the facilities covered by this nomination. MBTOC requests detailed information on location, volume, frequency of fumigation and historical usage data of each individual mill and plant that is included in this CUN and on the scope for adoption of alternatives. This may include use of the recently registered fumigant, sulfuryl fluoride.
Italy	CUN2003/026, It-6N5	Pepper - protected	160		160		130	MBTOC recommends a reduced CUE of 130 tonnes for 2006. Application is based on MB (98:2, hot gas, broad acre) is used at rate of 350 kg/ha with VIF. MBTOC notes that effective alternatives are available (e.g. Pic EC and 1,3-D used alone), particularly for the northern production region. Fungi are the key pathogens in the northern part of the country and chloropicrin is registered in Italy and can be used effectively for the control of the soil borne fungi. The quantity nominated has been adjusted to remove projected consumption for the northern region from the nomination, but has not been further adjusted to take into account additional transition to alternatives. Choice of alternatives is restricted by lack of registration of fumigant mixtures.
Italy	CUN2003/027, It-6N6	Strawberry fruit - protected	407		400		U	MBTOC is unable to assess this CUE. Clarification is sought on the following: the actual quantity of MB nominated for 2006, the potential for solarisation in combination with fumigants other than MB to replace MB, and yield and economic data associated with transition to substrate production to replace some or all MB use. Lack of registration restricts choice of alternatives in Italy. 1,3-D/Pic and MB/Pic combinations are not registered and national law prohibits the simultaneous application of pesticides. National law only authorizes the use of methyl bromide on the same field once every 2 years. Four alternatives are in process consideration for registration. 1,3-D/Pic has a projected registration decision of 2007; MB:Pic (50/50 combinations) has a projected registration decision of 2007/2008; iodomethane has a projected registration decision of 2010 and dimethyl disulfide has a projected registration decision of 2010.
Italy	CUN2003/027, It-6N7	Strawberry runners	120		120		U	MBTOC was unable to assess this CUN. Key technical data was not supplied. The Party states that key combinations of alternatives (1,3-D/Pic) not yet registered. MBTOC requests clarification from the Party as to why it is requesting the same tonnage of MB for 2006 than 2005 when it also appears the Party is lowering the dosage rate from 500 to 400 kg/ha. No data is provided on Pic EC as an alternative.

Party	MBTOC reference number(s)	Industry	Approved quantity (metric tonnes) for 2005 by EMOP (a)	Nominated quantity for 2005 in 2004 round	Nominated quantity for 2006 in 2004 round	New or additional quantity recommended by MBTOC for 2005	Quantity recommended by MBTOC for 2006	Comments by MBTOC
Italy	CUN2003/028, It-6N9	Tomato - protected	871		1030		U	MBTOC is unable to assess this CUE. A CUE of 871 tonnes was approved by EMOP for 2005 for this use. The CUN for 2006 substantially exceeds this quantity. No allowance has been made of commercial scale up and implementation of effective alternatives. The CUN is based on MB (98:2, hot gas, broad acre) is used at rate of 450 kg/ha with VIF, but MBTOC considers 350 kg/ha likely to be effective, with further reductions achievable by use of strip treatments. Part of the production in the CUN is short cycle which is not affected by nematodes and thus may not need MB. Risk of nematode infection is low with low soil temperatures (10-15°C). Information is sought (effectiveness, economics, cultivar compatibility) is sought on use of grafted plants with nematicides as a feasible MB alternative, the proportion of the crop that is short cycle and the total quantity of MB nominated after consideration of these and any other factors.
Japan	CUN2003/029, J56N8	Chestnuts	4.6	2.5	6.5	2.5	6.5	MBTOC recommends a CUE for an additional 2.5 tonnes for 2005 and 6.5 tonnes for 2006 be approved for this use. MBTOC has not identified alternatives for this use. The CUN indicates a decrease in use in 2006. There appears to be an unusually high frequency of fumigation, but with reasonable dosages. There may be scope for further usage reduction by decreasing the frequency of treatment. MB use might be reduced by only fumigating full chambers, or by consolidating loads.
Japan	CUN2003/029, J5-N1	Cucumber	39.4	48.9	87.6	48.9	87.6	MBTOC recommends a CUE for an additional 48.9 tonnes for 2005 and 87.6 tonnes for 2006 of MB be approved for this use. No alternatives are recognised and available for control of soilborne Kyuri (Cucumber) Green Mottle Mosaic Virus. The CUN states that chloropicrin, metham ammonium and ethylene oxide are not registered because of ineffectiveness to control the disease. The Party states that attenuated virus strain could be one of the prospective substitutes, but requires further development. Hydroponics/substrate production have been considered but are said to be uneconomic to this crop.
Japan	J5-N2	Ginger - field		119.4	119.4	N	N	MBTOC does not recommend this CUN. Several effective alternatives that exist or are in development (e.g. metalaxyl granules) for controlling this disease though the Party claims that some may need further testing and refinement. The CUN states that products such as chloropicrin cause difficulty when used in highly populated areas and others were deemed as not economically feasible in that plant back time prevents double crop production per year. Fumigation could be carried out in the summer cycle and sanitation of seed tubers should be implemented to prevent reinfestation of the soil. An IPM program can readily control <i>Pythium</i> diseases, the major pathogen of concern for this CUN.
Japan	J5-N3	Ginger - protected		22.9	22.9	N	N	MBTOC does not recommend this CUN. Several effective alternatives that exist or are in development (e.g. metalaxyl granules) for controlling this disease though the Party claims that some may need further testing and refinement. The CUN states that products such as chloropicrin cause difficulty when used in highly populated areas and others were deemed as not economically feasible in that plant back time prevents double crop production per year. Fumigation could be carried out in the summer cycle and sanitation of seed tubers should be implemented to prevent reinfestation of the soil. An IPM program can readily control <i>Pythium</i> diseases, the major pathogen of concern for this CUN.
Japan	CUN2003/029, J5-N5	Melon	94.5	99.6	171.6	99.5	171.6	MBTOC recommends a CUE for an additional 99.5 tonnes for 2005 and 171.6 tonnes for 2006 be approved for this use. No alternatives are recognised and available for control of soilborne Kyuri (Cucumber) Green Mottle Mosaic Virus and Melon Necrotic Spot Virus. The CUN states that chloropicrin, metham ammonium and ethylene oxide are not registered because of ineffectiveness to control the disease. The Party states that attenuated virus strain could be one of the prospective substitutes, but requires further development. Hydroponics/substrate production have been considered but are said to be uneconomic to this crop.
Japan	J5-N6	Peppers (hot)		23.2	23.2	U	U	MBTOC is unable to assess this CUN. No alternatives are recognised and available for control of Pepper Mild Mottle Virus (PMMoV) in crop residues under continuous monoculture in soil. The CUN states that dazomet, chloropicrin, metham ammonium are not registered because of ineffectiveness to control the disease. Hydroponics/substrate production have been considered but are said to be uneconomic for this crop. Methyl bromide (99.5%) is applied as broadacre or strip at rates varying between 300 to 470 kg/ha according to region. Information is sought on the correlation between disease risk and the dosage, soil condition and the application technique (strip or broadacre), and whether there is scope for reduction of MB use through use of VIF and/or increased use of strip treatment, and associated dosage reductions.

Party	MBTOC reference number(s)	Industry	Approved quantity (metric tonnes) for 2005 by EMOP (a)	Nominated quantity for 2005 in 2004 round	Nominated quantity for 2006 in 2004 round	New or additional quantity recommended by MBTOC for 2005	Quantity recommended by MBTOC for 2006	Comments by MBTOC
Japan	CUN2003/029, J5-N4	Peppers (green)	74.1	92.6	166.1	U	U	MBTOC is unable to assess this CUN. No alternatives are recognised and available for control of Pepper Mild Mottle Virus (PMMoV) in crop residues under continuous monoculture in soil. The CUN states that dazomet, chloropicrin, metham ammonium are not registered because of ineffectiveness to control the disease. Hydroponics/substrate production have been considered but are said to be uneconomic for this crop. Methyl bromide (99.5%) is applied as broadcast or strip at rates varying between 180 to 470 kg/ha according to the region. Information is sought on the correlation between disease risk and the dosage, soil condition and the application technique (strip or broadcast), and whether there is scope for reduction of MB use through use of VIF and/or increased use of strip treatment, and associated dosage reductions.
Japan	CUN2003/029, J5-N7	Watermelon	71.4	54.9	58.2	54.9	58.2	MBTOC recommends a CUE for an additional 54.9 tonnes for 2005 and 58.2 tonnes for 2006 of MB be approved for this use. No alternatives are recognised and available for control of soilborne Kyuri (Cucumber) Green Mottle Mosaic Virus. The CUN states that chloropicrin, metham ammonium and ethylene oxide are not registered because of ineffectiveness to control the disease. The Party states that attenuated virus strains could be one of the prospective substitutes, but requires further development. Hydroponics/substrate production have been considered but are said to be uneconomic to this crop.
Netherlands	NI5-N1	Strawberry runners - postharvest		0.12		N		MBTOC does not recommend this CUN. There are recognised alternatives for this application (e.g. hot water dipping). MBTOC notes that the nominated MB fumigations are carried out in chambers fitted with recapture systems.
New Zealand	NZ56N3	Nursery material		1.085	1.085	N	N	MBTOC does not recommend this CUN. Several effective alternatives are currently available (e.g. metham sodium, Pic, and plug plants) that could be adopted.
New Zealand	NZ56N1	Strawberry fruit		84	84	U	U	MBTOC is unable to assess this CUE. Clarification is sought on the feasibility of use of effect of key combinations of alternatives, particularly metham sodium/Pic, and 1,3-D with metham sodium, on what dosage rate of MB (active ingredient) is to be used in the CUN, on why exceptionally high dosage rates are apparently in use and potential for reduction of nominated quantities by use of strip treatment, VIF and increased proportions of chloropicrin. Applicant states that insufficient time has been available to evaluate 1,3-D/Pic yet the product has been registered since 2002.
New Zealand	NZ56N2	Strawberry runners		10	10	8	8	MBTOC recommends a reduced CUE of 8 tonnes of MB be approved for use in 2005 and in 2006. The nomination has been reduced for the use of VIF and a maximum dosage rate of MB of 20 kg/Ha in MB/Pic mixtures. The Party requested a CUE on the basis that the key alternative (1,3-D/Pic) does not provide consistent disease and weed control based on recently performed local trials. MBTOC acknowledges large variability in the performance of 1,3-D/Pic, chloropicrin, and Basamid data presented by the Party. The Party states that weather conditions in the spring are such that delays in fumigation are likely to occur causing unacceptable delays in planting. MBTOC requests clarification from the Party in any future CUN as to why fumigation before the winter (a typical practice in similarly situated enterprises elsewhere) could not be an acceptable solution to prevent planting delays.
Poland	PI56N1	Strawberry runners		40	40	40	40	MBTOC recommends a CUE of 40 tonnes for both 2005 and 2006 be approved for this use. The Party requests a CUE on the basis that available alternatives (metham sodium and Dazomet) do not provide adequate pest control required in strawberry runners produced for export and that key alternatives (1,3-D and chloropicrin) are not registered. The Party may wish to consider whether part or all of this CUN falls under QPS use of MB. MBTOC acknowledges that the Party has submitted a CUN based on 400 kg/ha for 98:2 MB and that the Party recognises a commitment to reduce the amounts of methyl bromide used despite the lack of technically feasible alternatives available to the Party at the present time. The Party is urged to consider further rate reductions by the adoption of VIF films and use of mixtures of MB/Pic (50:50) as a transition strategy.
Poland	PI56N2	Structures (dry commodities)		5	4.38	U	U	MBTOC is unable to assess this CUN. The Party is requested to disaggregate the commodity groups, specifying the target organism(s) and state any regulatory or technical reasons why each of the possible alternatives cannot be used for each separate commodity group. The Party is also requested to provide information on the specific situations that require treatment with MB for fungi.
Spain	CUN2003/033, Esc6N1	Cut flowers (Cadiz/Sevilla) - protected	53		53		42	MBTOC recommends a reduced CUE of 42 tonnes for 2006 for this use. This CUN is not significantly different from the one presented for 2005 and recently approved by the EMOP. MBTOC recognises several alternatives for production of various species of cut flowers, including 1,3-D (where registered) and substrates. The CUN has been reduced by 20% to allow for orderly phase-in of alternatives.

Party	MBTOC reference number(s)	Industry	Approved quantity (metric tonnes) for 2005 by EMOP (a)	Nominated quantity for 2005 in 2004 round	Nominated quantity for 2006 in 2004 round	New or additional quantity recommended by MBTOC for 2005	Quantity recommended by MBTOC for 2006	Comments by MBTOC
Spain	CUN2003/034, Esc6N2	Cut flowers (Cataluña) - carnation, protected and open field	20		18.6		15	MBTOC recommends a reduced CUE of 15 tonnes for 2006 for this use. This CUN is not significantly different from the one presented for 2005 and recently approved by the EMOP. MBTOC recognizes the substantial reduction of MB use from high historical levels and also of emissions by adoption of MB/Pic mixtures (e.g. 50:50), low rates (240 kg/Ha MB) with VIF films and biannual application of MB, strip treatment. Research conducted by the Party has identified alternatives that are economically and technically feasible. MBTOC recognises several alternatives for production of various species of cut flowers. The CUN has been reduced by 20% to allow for orderly phase-in of alternatives.
Spain	CUN2003/036, Esc6N3	Peppers - protected	200		155		155	MBTOC recommends a CUE of 155 tonnes for 2006 for this use. MBTOC notes the 25 % reduction in use over one year, associated with change in MB/Pic formulation used. The CUN identifies technically feasible alternatives for peppers, but that some of these alternatives are not registered or are not technically feasible. Rotation is not feasible because of long cycle and monoculture. Solarisation with or without biofumigation is not efficient in the control of nematodes. The use of resistant varieties and rootstocks is limited by availability, lack of specialised nurseries, race occurrence and other factors. The use of resistant varieties needs to be combined other measures such as 1,3-D/Pic. 1,3-D/ Pic is registered (2002), but needs time to be adapted for local use.
Spain	CUN2003/035, Esc6N4	Strawberry fruit - protected	556		499.29		499.29	MBTOC recommends a CUE of 499.29 tonnes for 2006 for this use. The combination of 1,3-D/pic has been proven effective in long-term trials and has been commercially available in Spain for several years, but doubts are expressed in the CUN as to its continued registration. Substrates are used in a small proportion of strawberry production in Huelva (López-Medina, 2002). The CUN in 2003 for this use noted the difficulties of adopting alternatives for this use in some growing regions with heavier soil types. A reduction in use is apparent for 2006 compared with the nomination for 2005.
Spain	CUN2003/032, Esc6N5	Strawberry runners	230		230		230	MBTOC recommends a CUE of 230 tonnes for 2006 be approved for this use. The CUN is based on the use of VIF films and a maximum dosage rate of 200 kgMB/ha in sandy and heavy soils. Alternatives have not demonstrated consistent and full spectrum pest control to meet nursery certification standards, especially in difficult growing conditions of high elevation nurseries in Spain. The Party experienced reduced yields of 15% with a key alternative (1,3-D/Pic) in a recent, local trial. The Party may wish to evaluate the feasibility of changes to their production system (e.g. substrates, suspended pots) that are being examined in other Parties for this use.
Switzerland	Sw56N1	Mills and Processors		8.7	7.0	8.7	7.0	MBTOC recommends a CUE of 8.7 tonnes for 2005 and of 7.0 tonnes for 2006 be approved for this use. An alternative fumigant, SF, has recently become registered for emptied flour mills in Switzerland. MBTOC has information from the registrant that the food tolerance issue raised in the nomination will not prohibit the fumigation of flour mills. Another alternative fumigant, HCN, is registered for use and a variety of IPM practices have proved effective elsewhere to reduce or eliminate the need for MB in similar situations. There appears to be scope for orderly implementation of alternatives.
UK	UK5-N1	Mills and Processors (biscuits)		2.525		2.525		MBTOC recommends a CUE of 2.525 tonnes for this use. The applicant has tried the most promising alternatives like heat and phosphine without convincing success. Parts of the premises (< 10,000m ³) may be suitable for heat application. Investigations should continue with the aim of improving application technology of alternatives such as heat and IPM systems.
UK	CUN2003/039, UKc6N6	Ornamental tree nurseries	6		6		6	MBTOC recommends a CUE of 6 tonnes for 2006 for this use. There have been no significant changes in the request from that which was approved by EMOP in March 2004. MBTOC recognizes the importance of clean propagative material, but seeks evidence that alternatives do not provide a sufficiently disease-free material to meet commercial standards of performance. This requires either comparative data on lack of disease tolerance provided by alternatives or grow on trials demonstrating differences in performance of planting material.
UK	UK5-N2	Spices (building, Newly Weds Foods)		1.8		1.8		MBTOC recommends a CUE of 1.8 tonnes for 2005 be approved for this use. The applicant has tried the most promising alternatives, heat and phosphine, without convincing success. There is reference to several UK research programmes which agree on SF being the most promising, but unregistered, alternative at this time. MBTOC suggests that IPM practices be used where possible to reduce emissions of MB. Investigations should continue with the aim of improving application technology of alternatives such as heat and IPM systems.
UK	UK5-N4	Spices and pappadums		0.035		0.035		MBTOC recommends a CUE of 35 kg for 2005 be approved for this use. MBTOC suggests that IPM practices be used where possible to reduce emissions of MB.

Party	MBTOC reference number(s)	Industry	Approved quantity (metric tonnes) for 2005 by EMOP (a)	Nominated quantity for 2005 in 2004 round	Nominated quantity for 2006 in 2004 round	New or additional quantity recommended by MBTOC for 2005	Quantity recommended by MBTOC for 2006	Comments by MBTOC
UK	UK5-N3	Spices (building, Pataks)		1.2		1.2		MBTOC recommends a CUE of 1.2 tonnes for 2005 be approved for this use. The applicant has tried the most promising alternatives, heat and phosphine, without convincing success. There is reference to several UK research programmes which agree on SF being the most promising, but unregistered, alternative at this time. MBTOC suggests that IPM practices be used where possible to reduce emissions of MB. Investigations should continue with the aim of improving application technology of alternatives such as heat and IPM systems.
UK	CUN2003/040, UKc6N7	Strawberries & raspberries - fruit	68		68		U	MBTOC is unable to assess this CUN. The Party has provided insufficient information to allow an assessment. MBTOC requests that the Party resubmit the nomination using the format provided in the Critical Use Handbook.
UK	UK5-N5	Woven baskets		0.77		0.77		MBTOC recommends a CUE of 770 kg in 2005 be approved for this use. Fumigations are carried out, mostly in container with some sheet fumigation, against non-quarantine pests that are unacceptable to buyers. Fumigations should continue to be carried out to best practice in reducing emissions and IPM practices should be adopted to reduce use of MB where possible. It appears that irradiation could be used as an alternative to MB for those consignments that contained materials corroded by phosphine. Phosphine fumigation is likely to be an alternative in cases where consignments do not include brass, copper or silver components.
USA	CUN2003/049, USc6N2	Cucurbits - field	1,187.77		747.839		747.839	MBTOC recommends a CUE of 747.839 tonnes for 2006 be approved for this use. This is based on the technical grounds that no alternatives are available for moderate to severe pest pressure (<i>Phytophthora</i> and nutsedge) in certain areas and that certain soils, weather and regulatory issues prevent the use of possible alternatives in other areas in the nomination. If this use continues to be nominated it would be useful to discuss effectiveness of grafting and whether VIF use could lead to further reduction in MB use. Nominations for melon, cucumber and squash should not be aggregated. MBTOC notes that this nomination could be dramatically reduced if an effective strategy or herbicide was available to control moderated to heavy nutsedge infestations. MBTOC recommends generating and validating information for methyl iodide against nutsedge under the specific pest and weather conditions of the nomination. MBTOC acknowledges the reduction in amount requested by the Party from previous nomination.
USA	CUN2003/048, USc6N1	Dried fruit and nuts		2.413	82.916		82.916	MBTOC recommends a CUE of an additional 2.413 tonnes for 2005 and of 82.916 tonnes for 2006 be approved for this use. The CUN for additional tonnage in 2005 refers specifically to rapid treatment of dates. This CUN is related only to rapid treatments required at peak harvest periods, where alternatives are not available. MB has been replaced by phosphine in several areas where time constraints permit. There may be scope for reduction of this use as the industry adopts the recently approved alternative of sulfur dioxide and food residue approvals are obtained in key markets. The quantity nominated is substantially greater than historical usage.
USA	US56N10	Dry commodities/structures		144.864	181.079	U	U	MBTOC is unable to assess this CUN. The Party has requested amounts for treatment of cheese plants, and in addition for a range of commodities listed as spices and herbs, cocoa, dried milk, other commodities and processed foods. MBTOC recognises the need for MB for cheese stores and for dried milk. MBTOC can determine no reason why alternatives cannot be used for all or most of the spices and herbs, cocoa, and processed foods. Alternatives registered for some of all these commodities in the US include irradiation, ethylene oxide, steam and propylene oxide. In addition most of the use designated as 'for other commodities' may qualify as QPS treatments. The Party is requested to disaggregate the commodity groups, specifying the target organism and state any regulatory or technical reasons why each of the possible alternatives cannot be used for each separate commodity group and target.
USA	CUN2003/050, USc6N3	Eggplant - field	73.56	3.161	105.869		U	MBTOC is unable to assess this CUN. According to the nomination, no alternatives are available for severe fungi, nematodes and nutsedge pressure in certain areas. Topography and regulatory issues prevent the use of one possible alternative (1,3-D). However, several fumigant alternatives are providing effective control of pests (e.g. 1,3-D/Pic, Pic alone, metham sodium and Pic used in combination) and that some herbicides (e.g. halosulfuron) are available to control nutsedge. It appears that a rapid transition to alternatives is possible. MBTOC is concerned that much of the research conducted on uses of alternatives is conducted on peppers or tomato and extrapolated to eggplant production, particularly on the impact of nutsedge infestation. The 2006 nomination requests 33 tonnes more MB than nominated in 2005. Information is sought on the reasons for the increase in nominated quantity and on whether processes such as VIF films and strip fumigation with use of herbicides can be used to reduce or eliminate MB use in at least some areas.

Party	MBTOC reference number(s)	Industry	Approved quantity (metric tonnes) for 2005 by EMOP (a)	Nominated quantity for 2005 in 2004 round	Nominated quantity for 2006 in 2004 round	New or additional quantity recommended by MBTOC for 2005	Quantity recommended by MBTOC for 2006	Comments by MBTOC
USA	CUN2003/052, USc6N5	Forest nursery seedlings	192.512		157.694		157.694	MBTOC recommends that a CUE of 157.694 tonnes for 2006 be approved for this use. MBTOC recognizes a number of alternatives for this use, including 1,3-D, containerisation and steaming. The CUN states that available alternatives have not yet been found to be feasible technically or economically in certain specific circumstances. The Party has reduced the amount requested for 2006 by 27% compared with that for 2005. The recommended amount is consistent with a rate of 200 kgMB/ha.
USA	USc6N16	Nursery stock - fruit trees, raspberries, roses			64.528		64.528	MBTOC recommends that a CUE of 64.528 tonnes for 2006 be approved for this use. This CUN is not significantly different in technical content from the nomination approved by EMOP, but now includes rose propagation stock and is effectively 9% less than the nomination in 2005. This is essentially 3 separate nominations, for raspberry, fruit and nut tree and rose nursery stock. Several potential alternatives were found not to penetrate sufficiently deeply in moderate to heavy textured soils for production of pest-free nursery stock to the standard needed for clean propagative material. For fruit and nut trees and rose stock, 1,3-D/Pic use is restricted regulatory reasons (township caps). Substantially different production systems are in use for nursery roses in some other countries, but adoption of these systems would entail significant changes to both process and product. There appears to be scope for reduction of MB dosage rates through use of VIF or barrier films where permitted.
USA	CUN2003/051, USc6N4	Mills and Processors	483		505.982		U	MBTOC is unable to assess this CUN. Detailed information on the location, size, frequency of MB fumigation and historical usage data of each individual mill and plant included in this nomination. The Party may wish to adjust the quantity nominated in view of recent registration of one potential alternative (SF) for this usage.
USA	CUN2003/054, USc6N14	Nursery float trays for tobacco seedlings	0	1.449	4.112	N	N	MBTOC does not recommend this CUN for either 2005 or 2006. A similar nomination was not approved by the EMOP. There are technically and economically feasible alternatives, particularly forms of steaming, for disinfecting tobacco seedling trays in use in both the region involved in the nomination and elsewhere. Another approach for managing pests in the trays include various IPM measures including cultural practices. New glazed trays that provide an extra barrier to the transmission of pests are now available.
USA	CUN2003/056, USc6N7	Orchard replant	706.2		839.775		529.7	MBTOC recommends a reduced CUE of 529.6 tonnes for 2006 be approved for this use. This recommendation includes 1.6 tonnes for research. Three alternatives, 1,3-D alone and 1,3-D combined with chloropicrin or metham sodium, are available technical alternatives in the CUN for treatment in light soils. Soil moisture conditions and current labeled rates of 1,3-D are not sufficient for adequate control in fine textured soils. Regulatory issues (township caps) restrict the use of 1,3-D. The nomination states these soil and regulatory impacts occur in 37-58% of the applicant's original request. The quantity nominated has been adjusted to the lower end of this range, after allowance for the nominated research quantity. MBTOC recognizes that perennial crop replant disease is a problem for which alternatives to MB are generally not adequately proven. The main constraint to the adoption of alternatives is the inability to identify definitively what is causing replant disease and implement appropriate response. MBTOC recognises that the industry is aware of technically feasible and available alternatives and use of VIF for emission reduction.
USA	US56N8	Ornamentals		183.342	230.856	U	U	MBTOC is unable to assess this CUN. It is requested that the nomination is disaggregated by growing region and listed by flower crop to allow detailed evaluation. MBTOC recognizes that MB dosage rates used in California are within MBTOC guidelines and that 93% of the flower industry in that state is using alternatives. Adoption in the remaining 7% is impacted by regulatory constraints. In Florida, the rates of MB used are high even though MB/Pic mixtures are used. There appears scope for substantial reduction in this area through use of barrier films coupled with reduced MB rates where alternatives are not feasible.
USA	CUN2003/058, USc6N9	Peppers - field	1085.3	9.482	1,572.181	U	U	MBTOC is unable to assess this CUN. According to the nomination, no alternatives are available for severe fungi, nematodes and nutsedge pressure in certain areas. Topography and regulatory issues prevent the use of one possible alternative (1,3-D). However several fumigant alternatives are providing effective control of pests (e.g. 1,3-D/Pic, Pic alone, metham sodium and Pic used in combination) and that some herbicides (e.g. halosulfuron) are available to control nutsedge. It appears that a rapid transition to alternatives is possible. In Michigan, the key pest Phytophthora capsici, a pathogen that can be controlled by chloropicrin. Information is sought on whether processes such as VIF films and strip fumigation with use of herbicides can be used to reduce or eliminate MB use in at least some areas.

Party	MBTOC reference number(s)	Industry	Approved quantity (metric tonnes) for 2005 by EMOP (a)	Nominated quantity for 2005 in 2004 round	Nominated quantity for 2006 in 2004 round	New or additional quantity recommended by MBTOC for 2005	Quantity recommended by MBTOC for 2006	Comments by MBTOC
USA	CUN2003/048, US56N6	Smokehouse Ham (building and product)	0.907	135.397	169.246	U	U	MBTOC is unable to assess this CUN. A CUE of 0.907 tonnes was approved by the EMOP for this use for 2005. The Party states historical use has varied from 972 kg and 1659 kg per year for the past few years. MBTOC does not recognise any viable alternatives for the use, but requests clarification of the reasons for the large increase in quantity of use leading to the nomination and further information on why this need is critical.
USA	CUN2003/059	Strawberry fruit - California (reconsideration)		1542		1445		MBTOC recommends a CUE of 1445 tonnes in 2005 be approved for this use. This is a component of the nomination for strawberry (fruit production) submitted in 2003 and referred back to MBTOC for further consideration. The Party recognises that alternatives are available for a proportion of the growing acreage, but that time is required for orderly transition to these alternatives. The Party submitted that only 1370 ha could reasonably be converted to alternatives in the time available. Adjustments made to the tonnage requested on the same basis as was used in the 2003 round (allowance for further use of MB/Pic 50:50).
USA	CUN2003/059, USc6N11	Strawberry fruit - field	1833.846		1,615.339		U	MBTOC is unable to assess this CUN. The application is based on the technical grounds that no alternatives are available for moderate to severe pest pressure for root rot and nutsedge in certain areas, and that certain topographies and regulatory issues restrict the use of possible alternatives. MBTOC considers alternatives are technically feasible for the spectrum of target pests, e.g. 1,3-D/Pic, but it accepts that some approaches restricted because of karst topography, buffer zones and caps. MBTOC considers that other alternatives (Pic EC, metham sodium/Pic), are technically suitable in at least some areas where regulatory issues or slopes affect the use of 1,3-D and requests clarification as to why these alternatives cannot be used more extensively. Longer waiting time does not appear to be a problem because a common rotational crop (celery) is grown until May, and strawberry is not planted until July (S California) or Sept (N California). Clarification is also requested on proportion of the CUN that can use strip fumigation, with consequent dosage reductions and to clarify dosage rates of MB used in the regions of the CUN. Part of the nomination was based on the 1X township cap for 1,3-D, and there is scope for further reduction if the 2X cap is allowed. For SE USA, technical information indicates there are a range of alternatives available for nutsedge control.
USA	CUN2003/060, USc6N12	Strawberry runners	54.988		56.291		U	MBTOC is unable to assess this CUN. A large amount (88%) of MB use has been exempted to meet certification requirements for QPS as determined under US regulatory controls. It is unclear how the remaining part of the nomination differs and whether it is required to meet the same performance standards. Technical data provided with the submission indicates that metham sodium and chloropicrin are providing effective disease control and clarification is required on why this alternative cannot be adopted. The possible alternatives, 1,3-D/Pic or 1,3-D alone followed by metham sodium, are reported not to be effective, but no data is provided in the submission to support lack of effectiveness to the necessary depth. The rate of MB used in Michigan in MB/Pic mixtures is high (413 kg/ha) and should be reduced in conjunction with barrier films, unless there are specific indications to the contrary.
USA	US56N13	Tobacco - seedlings		13.145	16.431	N	N	MBTOC does not recommend this CUN. There are technical and economical suitable alternatives widely used in the same circumstances in the US and abroad. Floating trays, substrate seedbeds, and 1,3-D (if registered for seedbeds) are valid examples. MB is not needed for sterilising seedling trays. MBTOC has already argued in that 2003 round that alternatives are already available of trays.

Party	MBTOC reference number(s)	Industry	Approved quantity (metric tonnes) for 2005 by EMOP (a)	Nominated quantity for 2005 in 2004 round	Nominated quantity for 2006 in 2004 round	New or additional quantity recommended by MBTOC for 2005	Quantity recommended by MBTOC for 2006	Comments by MBTOC
USA	CUN2003/062, USc6N15	Tomato - field	2865.3		2,917.541		U	MBTOC is unable to assess this CUN. According to the nomination, no alternatives are available for severe fungi, nematodes and nutsedge pressure in certain areas. Topography and regulatory issues prevent the use of one possible alternative (1,3-D). However several fumigant alternatives are providing effective control of pests (e.g. 1,3-D/Pic, Pic alone, metham sodium and Pic used in combination) and that a number of herbicides (e.g. halosulfuron methyl, trifloxysulfuron) are available to control nutsedge. It appears that a rapid transition to alternatives is possible. In Michigan, the key pest, Phytophthora capsici, can be controlled by chloropicrin and substrate production systems are used in similar areas. Information is sought on scope for reduction of the nomination with use of non-1,3-D alternatives such as methan sodium/Pic combinations in areas with Karst geology, the proportion of the crop affected by plantback restrictions with nutsedge herbicides, the restrictions on sequential application of alternatives where useful, and the scope for reduced MB dosages associated with use of VIF, strip treatment and herbicide use.
USA	CUN2003/063, USc6N17	Turfgrass	206.826		131.6		131.6	MBTOC recommends a CUE of 131.6 tonnes in 2006 be approved for this use. The Party has reduced the requested volume of MB by 40% from that approved by the EMOP in 2005. This quantity is to allow the industry further orderly transition to alternatives.

Footnotes

(a) Some CUNs have been reorganised by Parties and do not map directly onto 2003 round approvals.

N Not recommended

U Unable to assess