

Appendix A

Evaluation of Critical Use Nominations – Soils

Party	CUN Number	(a) Industry	Reported past use (unofficial)	Quantity nominated		Recom-mendation for 2005	Comment
				Year	Years		
Australia	CUN2003/001	Cut Flowers - field	120 t (1998), 60t (2001)	40t w/o VIF or 25t with VIF	6	10t Tonnes	MBTOC recommends that a reduced CUE of 10t be approved to allow for commercial scale up of alternatives. An alternative, 1,3-D/Pic, has been registered since Sept 2001 in Australia, but has only just been made available in northern Australia. The CUN states that 1,3-D cannot be applied within 1.5m of cropped soils. MBTOC recommends that the Party consider a further reduction of the amount requested as MB/Pic (50:50) is technically suitable as a transition strategy until 1,3-D/Pic is available and rates of application can be reduced from 62.5 g/m2 to 30g/m2 by use of VIF films and this will substantially reduce emissions.
Australia	CUN2003/002	Cut flowers - protected	120t (1998), 60t (2001)	60t w/o VIF or 40t with VIF	6	20t	MBTOC recommends that a reduced allocation of 20t be approved. MBTOC has suggested a reduced allocation of MB in consideration of adoption of emission reduction strategies where the maximum amount of MB considered effective could be reduced by use of VIF to 60g/m2 for 100% MB or use of MB/Pic mixtures (50:50) with VIF at 30g/m2 (i.e. adoption of VIF and formulation change). Substrates and steam are considered suitable technical alternatives, though MBTOC recognises that steam may be expensive and that not all flower species can be successfully grown in substrates. Owing to reported phytotoxicity and the need for short plant back times, available chemical fumigant alternatives are at present considered inappropriate in the circumstances of the nomination.
Australia	CUN2003/003	Cut flowers, bulbs - protected	17.6t (1998)	7	2	7t	MBTOC recommends that a reduced CUE of 7t be approved for the basis of the statement that no alternatives exist for cropping on steeply sloping ground, (ie.> 10). MBTOC suggests that the Party substantiate the proportion of crops that can be grown in substrates and identify whether the steam plate application or similar methods are appropriate alternatives. MBTOC recognises that steam may be expensive and that not all crops can be successfully grown in substrates. Owing to the need for short plant back times, no chemical fumigant alternatives are presently considered suitable under the specific circumstances of the nomination. The applicant appears to have accounted for emission reduction strategies when calculating the amount and has restricted the maximum amount of MB used to 60g/m2 when not gas formulations of MB are used with VIF films.
Australia	CUN2003/005	Strawberry fruit - field	3300? (1998)	90t then 59t (2006) and 58t (2007)	3	24t	MBTOC recommends that a reduced CUE of 24t of MB be approved. An alternative, 1,3-D/Pic, has been available since Sept 2001 in Australia, but time is requested to allow for commercial scale up throughout States received the product in the latter part of 2002. The CUN states that 1,3-D/Pic is phytotoxic, but MBTOC is not aware of any study supporting phytotoxicity in fruiting fields. MBTOC recommends that the Party consider a reduction of 67% of the amount requested as MB/Pic (50:50) is considered technically suitable as a transition strategy until 1,3-D/Pic is available and rates of application can be reduced from 50 g/m2 to 30g/m2 by use of VIF films, thereby substantially reducing emissions.
Australia	CUN2003/006	Strawberry runners	33.6 (1998), 29.8 t (2001)	35,75	3	35,75t	MBTOC recommends that 35,75t be approved. The CUN states that MB is required to meet certification standards. The CUN did not provide comparative data to show whether or not available alternatives provide the same disease tolerance threshold as MB. The CUN notes plug plants grown in hydroponics a possible alternative, but time and cost was preventing the adoption of this technology. MBTOC considers plug plant technology a technical alternative to methyl bromide, but understands that further development is required before complete adoption is possible. The applicant has shown that the most promising alternative for open field production of nursery plants, 1,3-D/Pic, has been phytotoxic and that attempts to use VIF films have failed because glides do not work in cold temperatures. The Party may wish to reduce the request for a CUE quantity to account for adoption of plug plant systems. The industry already uses 25g/m2 of MB and is encouraged to try to further reduce amounts by adopting VIF films and better glues which allow a reduction in emissions.
Belgium	CUN2003/007		221.12 (1995); 127.5 t (1998)	100	(b)	(c)	MBTOC is unable to recommend this nomination in entirety because of insufficient information to allow full evaluation relating to specific crops within this CUN. An extensive list of references were provided for research in Belgium, almost no comparative results on pathogen control and yields with alternatives were provided for specific situations for specific crops. Information is needed on registration status of key alternatives and their applicability in open fields or protected crops in Belgium. Although MBTOC acknowledges that fumigant mixtures are more difficult to use in protected environments when other crops are grown in the vicinity of the treatment there was no data given to support the 5 week plant back period for chloropicrin or lack of effect when temperatures are below 20°C. MBTOC is also unclear for what proportion of crops steam and substrates were considered technical alternatives.
Belgium	CUN2003/007	Lettuce and endive - open field	65.02 t (1998)	42.25	(b)	0t	MBTOC is unable to recommend this nomination. The CUN is a contingent application based on the justification that all uses that can be accomplished with other methods have already switched and that the remaining use (which has been assumed will expand dramatically) is critical. Lettuce and endive are not typically grown with the aid of MB and no justification is made for this unusual nomination. The CUN correctly states that steam and soilless culture are feasible alternatives and that fumigant alternatives are less effective at lower temperatures, but does not provide efficacy data to support this statement. MBTOC is unclear as to what proportion of these crops can be grown in substrates (as occurs at present in neighbouring countries) and why the proportion of crops requiring methyl bromide in 2005 has increased substantially. The applicant should be encouraged to fully evaluate other chemical and non-chemical alternatives. Economic analysis of the data submitted with the CUN indicates that some alternatives are economically feasible.

Party	CUN Number	(a)	Industry	Reported past use (unofficial)	Quantity nominated		Recomm-entation for 2005	Comment
					t/year	Years		
Belgium	CUN2003/007	-c	Tomatoes protected	-29.42 t (1998)	17,17	(b)	(c)	MBTOC is unable to complete its evaluation of this CUN on the basis of available information. The application is a contingent application based on the justification that all uses that can be accomplished with other methods have already switched and that the remaining use (which has been assumed will expand dramatically) is critical. Substrates have been adopted for 75-80% of tomato production in Belgium. The applicant correctly states that steam and soilless culture is a feasible alternative and that fumigant alternatives are less effective at lower temperatures but fails to provide comparative efficacy data. MBTOC is also unclear as to what proportion of these remaining MB-using crops can be grown in substrates (as occurs at present in neighbouring countries) and why the proportion of crops requiring methyl bromide in 2005 has increased substantially.
Belgium	CUN2003/007	-d	Pepper, eggplant protected	-13.77 t (1998)	5,27	(b)	(c)	MBTOC is unable to complete its evaluation of this CUN on the basis of available information. The application is a contingent application based on the justification that all uses that can be accomplished with other methods have already switched and that the remaining use (which has been assumed will expand dramatically) is critical. The applicant correctly states that steam and soilless culture is a feasible but costly alternative and that fumigant alternatives are less effective at lower temperatures but fails to provide suitable efficacy data. MBTOC is also unclear as to what proportion of these crops can be grown in substrates (as occurs at present in neighbouring countries) and why the proportion of crops requiring methyl bromide in 2005 has increased substantially. The applicant should be encouraged to fully evaluate 1,3-D/Plc and other chemical and non chemical alternatives. A creage has been significantly reduced by using substrates (75-80% of tomato and up to 100% of cucumber and sweet peppers). Reasons for not using substrates for remaining production are not given.
Belgium	CUN2003/007	-e	Cucurbits	5.48 t (1998)	0,61	(b)	(c)	MBTOC is unable to complete its evaluation of this CUN on the basis of available information. No information is supplied in the CUN on area to be treated in 2005. The CUN states that there are technical problems associated with the use of substrates, but these have not been specifically validated for cucurbits and they are in use in neighbouring countries for the same crop. In view of the case presented, MBTOC is unable to support a recommendation although it is recognised that some potential alternatives are not registered.
Belgium	CUN2003/007	-f	Beans	0 t (1998)	0,23	(b)	(c)	MBTOC is unable to complete its evaluation of this CUN on the basis of available information. The application is a contingent application based on the justification that all uses that can be accomplished with other methods have already switched and that the remaining use (which has been assumed will expand dramatically) is critical. The applicant states that fumigant alternatives are less effective at lower temperatures but does not provide comparative efficacy data. MBTOC is also unclear as to what proportion of these crops can be grown in substrates and why the proportion of crops requiring methyl bromide in 2005 has increased substantially. MBTOC has noted that applicant reports using 0t of MB for this crop in 2001 and presented no justification for renewing use. The applicant should be encouraged to fully evaluate 1,3-D/Plc and other chemical and non chemical alternatives.
Belgium	CUN2003/007	-g	Radish	No data	0,14	(b)	(c)	MBTOC is unable to complete its evaluation of this CUN on the basis of available information. The application is a contingent application based on the justification that all uses that can be accomplished with other methods have already switched and that the remaining use (which has been assumed will expand dramatically) is critical. No historical use of MB has been provided and the crop is not typically grown elsewhere with the aid of MB. The applicant states that fumigant alternatives are less effective at lower temperatures but does not provide comparative efficacy data. MBTOC is also unclear as to why the proportion of crops requiring methyl bromide in 2005 has increased substantially. Applicant should be encouraged to fully evaluate chemical and non chemical alternatives.
Belgium	CUN2003/007	-h	Asparagus	No data	0,63	(b)	(c)	MBTOC is unable to complete its evaluation of this CUN on the basis of available information. No amount of MB has been used (specified) historically. If the Party considers this application should be supported they would need to provide specific data for use of alternatives on asparagus as MBTOC has no other data to reference in support of the use of fumigation on this crop.
Belgium	CUN2003/007	-i	Strawberry fruit	4.05 t (1998)	3,4	(b)	3.4	MBTOC recommends that up to 3.4t be approved for CUE contingent on the Party providing an update on the registration status of 1,3-D/Plc and provide evidence that substrates are not a technical alternative for production of strawberries under the specific circumstances of the nomination. Whilst significant data and information is lacking from the submission, MBTOC recognises that adequate technical alternatives may not be available for production of strawberries in the circumstances of the nomination but notes that substrate production is extensively used in neighbouring countries.
Belgium	CUN2003/007	-j	Orchard - pome fruit & berries	3.86 t (1998)	1,35	(b)	1.35	MBTOC is unable to recommend a CUE on the basis of the available information, but notes that other Parties have made apparently similar nominations that were supported by MBTOC. MBTOC thus recommends a CUE of 1.35t. The application is a contingent application based on the justification that all uses that can be accomplished with other methods have already switched and that the remaining use is critical. Applicant also points out that 2001 was an unusually low use year because growers were concerned that high rates of MB beneath VIF films may be phytotoxic. The applicant correctly states that soilless culture is a feasible alternative and that fumigant alternatives are less effective at lower temperatures but does not provide comparative efficacy data. MBTOC is unclear as to what proportion of this nomination is for orchards and fields suffering from Replant Disorder. Although MBTOC has identified Perennial Crop Replant Disorder as a problem for which alternatives to MB may be inadequate, it is not clear whether this is the situation represented by this nomination.

Party	CUN Number	(a)	Industry	Reported past use (unofficial)	Quantity nominated		Recom-mendation for 2005	Comment
					/year	Years		
Belgium	CUN2003/007	-k	Chicory (Brussels willow)	0.54 t (1998)	0.6	(b)	(c) MBTOC is unable to complete its evaluation of this CUN on the basis of available information. The application is a contingent application based on the justification that all uses that can be accomplished with other methods have already switched and that the remaining use (which has been assumed will expand dramatically) is critical. Amount of MB requested is higher than used in 2001 with no clear justification of why this is necessary. The applicant states that fumigant alternatives are less effective at lower temperatures, but does not provide comparative efficacy data. MBTOC is also unclear as to why the proportion of crops requiring methyl bromide in 2005 has increased substantially. Applicant should be encouraged to fully evaluate chemical and non chemical alternatives.	
Belgium	CUN2003/007	-l	Leek, onions	0 t (1998)	1,22	(b)	(c) MBTOC is unable to complete its evaluation of this CUN on the basis of available information. No amount of MB has been used (specified) historically. Fumigation is not used to grow leeks and onions in most regions of the world. If the Party considers this application should be supported they would need to provide specific data for use of MB and alternatives for leeks and onions as MBTOC has no other data to refer to to support the use of fumigation for this crop.	
Belgium	CUN2003/007	-m	Celery	No data	0.56	(b)	(c) MBTOC is unable to complete its evaluation of this CUN on the basis of available information. No amount of MB has been used (specified) historically. If the Party considers this application should be supported they would need to provide specific data for use of MB and alternatives on celery as MBTOC has no other data to reference in support of the use of fumigation for this crop.	
Belgium	CUN2003/007	-n	Cut flowers excl. roses and chrysanthemum	19.79 t (1998)	6,11	(b)	(c) MBTOC is unable to recommend this CUN. Significant attempts have not been made to reduce consumption of MB. Amount requested is higher than historical use (2001). MBTOC notes the R & D plan to reduce consumption of MB is restricted to biocontrol, but might cover a wider range of alternatives. Methods which avoid the need for MB (substrate production) are considered technically feasible by the applicant, however, industry needs to validate their use for each particular flower species. Reduced efficacy of metham sodium due to low temperatures may be overcome by improved application techniques (e.g. spading). MBTOC considers steam a technically feasible alternative for small scale use for protected crops.	
Belgium	CUN2003/007	-o	Cut flowers-roses	4.37 t (1998)	1,64	(b)	(c) MBTOC is unable to recommend this CUN. Significant attempts have not been made to reduce consumption of MB. Amount requested is higher than historical use (2001). MBTOC notes the R & D plan to reduce consumption of MB is restricted to biocontrol, but might cover a wider range of alternatives. Methods which avoid the need for MB (substrate production) are considered technically feasible by the applicant. Reduced efficacy of metham sodium due to low temperatures may be overcome by improved application techniques (e.g. spading). MBTOC considers steam a technically feasible alternative for small scale use for protected crops.	
Belgium	CUN2003/007	-p	Cut flowers-chrysanthemum	11.96 t (1998)	1,8	(b)	(c) MBTOC is unable to recommend this CUN. Significant attempts have not been made to reduce consumption of MB. Amount requested is higher than historical use (2001). MBTOC notes the R & D plan to reduce consumption of MB is restricted to biocontrol, but might cover a wider range of alternatives. Methods which avoid the need for MB (substrate production) are considered technically feasible by the applicant. Reduced efficacy of metham sodium due to low temperatures may be overcome by improved application techniques (e.g. spading). MBTOC considers steam a technically feasible alternative for small scale use for protected crops.	
Belgium	CUN2003/007	-q	Ornamental plants	11.96 t (1998)	5,66	(b)	(c) MBTOC is unable to complete its evaluation of this CUN on the basis of available information. Significant attempts have not been made to reduce consumption of MB. Amount requested is higher than historical use (2001). MBTOC notes the R & D plan to reduce consumption of MB is restricted to biocontrol, but might cover a wider range of alternatives. Methods which avoid the need for MB (substrate production) are considered technically feasible by the applicant, however, industry needs to validate their use for each particular flower species. Reduced efficacy of metham sodium due to low temperatures may be overcome by improved application techniques (e.g. spading). MBTOC considers steam a technically feasible alternative for small scale use for protected crops in this region.	
Belgium	CUN2003/007	-r	Nursery	1.44 t (1998)	not predictable	(b)	(c) MBTOC is unable to complete its evaluation of this CUN on the basis of available information. Applicant has not requested a specific amount of MB nor specified a land area, but has indicated the need as "unpredictable". The CUN correctly states that soilless culture is a feasible alternative and that fumigant alternatives are less effective at lower temperatures but does not provide comparative efficacy and cost data. MBTOC is also unclear as to what proportion of these crops are for certified nursery production and what regulations apply to certified nurseries.	
Belgium	CUN2003/007	-s	Tree nursery	3.86 t (1998)	0,23	(b)	(c) MBTOC recommends that 0.23t be approved, on the basis of evaluation of similar applications from other Parties. The amount nominated represents 88% reduction from the amount used in 2001. Although very little information is given in the application, MBTOC recognizes that propagation of healthy plant material is an area where many methyl bromide alternatives may be inadequate. MBTOC recognizes that some alternatives may not be registered and that cool soil temperatures impact efficacy of some alternatives.	
Belgium	CUN2003/007	-t	All crops (yellow nutsedge)	No data	not predictable	(b)	(c) MBTOC unable to recommend this nomination as presented, but requests the Party provides information on the status of herbicides registered to control this weed by crop and comparative data on the effectiveness of alternatives relative to MB to allow further evaluation of the nomination.	

Party	CUN Number	(a) Industry	Reported past use (unofficial)	Quantity nominated		Recom- mendation for 2005	Comment
				/year	Years		
Canada	CUN2003/009	Strawberry runners	12.839t	7,952	2	8t	MBTOC recommends a CUE for 8t of MB be approved, based partly on evaluation of similar CUNs from other Parties. This nomination lacked comparative data to determine the technical feasibility of many alternatives, including plug plants, and their comparative performance compared to MB. The nomination does not consider the full range of chemical alternatives reported to be effective by MBTOC. The nomination also contains limited research (one private undisclosed study) to support claims and is relying on research in other countries to support the CUE. Whilst certification to achieve disease tolerance is assumed to be the reason for the CUN, the actual reason is not stated. MB is currently applied as 67:33 (MB/Pic) at 30 to 40 g/m ² . MBTOC recommends that for open field use of MB after 2005, that emission reduction techniques, e.g. VIF, are used and a maximum rate of 30g/m ² of MB used unless it can be demonstrated a higher rate is needed.
France	CUN2003/010	Carrots - protected and field	7.7 t	10	4	(c)	MBTOC is unable to complete its evaluation of this CUN on the basis of available information. The CUN does not provide comparative data or references to technically validate that alternatives were ineffective and MBTOC is unable to use data from other Parties to assist evaluation because this was the only CUN involving carrot growing. MBTOC is unclear why the amount requested exceeds historic use.
France	CUN2003/013	Cucurbits - protected and field	206 t (1997)	85	4	(c)	MBTOC is unable to recommend a CUE on the basis of the available information. The industry presently uses MB/Pic (98:2) at rates of 60 g/m ² with VIF traps. As submitted the CUN does not fully substantiate that no alternatives reported by MBTOC are technically appropriate. The CUN provides no analysed technical comparisons of efficacy of alternatives and avoids discussion of alternatives in combination. The CUN states that dazomet gave satisfactory results, but its efficacy is limited by low soil temperatures in the northern part of France. The CUN also states that chloropicrin and metham sodium give good control of weeds and fungi and that steam is applicable on light soils. MBTOC has further information which does not conform to the case presented. The alternatives, 1,3-D/Pic, chloropicrin, solarisation, biofumigants, grafting and their combinations are technically considered to be effective alternatives for cucurbit production in many climatic regions. Chloropicrin use is banned by local legislation. MBTOC recognises that some technically feasible alternatives are not registered in France and that significant attempts to reduce MB usage have been made through rate reduction and use of VIF's.
France	CUN2003/014	Forest nurseries	20 t (1998)	10		10t	MBTOC recommends a CUE for 10t of MB be approved, based partly on evaluation of similar CUNs from other Parties. This CUN represents 50% reduction of the reported usage of methyl bromide since 1995. A total of 20 hectares are crops that are grown outdoors. The industry presently uses MB/Pic (98:2) at a rate of 50g/m ² under VIF, though historically has used 70 g/m ² . As submitted the application partially substantiates that all the possible alternatives reported by MBTOC are technically inappropriate, but insufficient detail on efficacy was given. Contaminated plant systems apparently present a non-MB option. The application states that dazomet gave satisfactory results, but its efficacy is limited by low soil temperatures in the northern part of France. Applicant also states that chloropicrin and metham sodium give good control of weeds and fungi and that steam is applicable on light soils. MBTOC is assuming that these alternatives have been considered in asking for a reduced amount in the nomination.
France	CUN2003/015	Orchard and raspberry nurseries	16 t (1997)	5	4	5t	MBTOC recommends a CUE for 5t of MB be approved, based partly on evaluation of similar CUNs from other Parties. This will allow allow the industry time to substantiate claims for CUE or implement existing or new alternatives which are under evaluation and development. The quantity of MB requested represents 70% reduction of the reported usage of methyl bromide in 1997. The industry presently uses MB/Pic (98:2 or 99.5:0.5) at rates of 50 g/m ² under VIF, but historically has used rates as high as 80 g/m ² . MBTOC's 2002 Assessment has identified the level of disinfection required for nursery certification as a problem for which alternatives to methyl bromide are generally inadequate. As submitted the application provides no analysed technical comparisons of efficacy of alternatives specifically for use in certified nurseries. The only trial results presented are from orchard replant trials. Significant attempts have been made to reduce consumption of MB by reducing the land area treated, and reducing the rates of MB application from 800 kg/ha to 500 kg/ha, through use of VIF traps.
France	CUN2003/016	Cut flowers, bulbs - protected and open field	198 t (1998)	75	4	60t	MBTOC recommends that a reduced CUE of 60t of MB be approved, with the reduction on the basis of progressive adoption of identified alternatives (substrates, steam). MBTOC recognises that several technically feasible alternatives, particularly chloropicrin and chloropirin mixtures, are not registered in France and that significant attempts to reduce MB usage since 1995 have been made. Conversion to production of crops in substrates was identified as a technically feasible alternative but it was stated that time was required (up to 5 years) to convert some crops. Steam is also a technically feasible alternative which has been made cost effective in similar cropping situations in some countries and it is recommended that the Party determine what proportion of MB could be replaced by this treatment. A plan for adoption of MB alternatives might include implementation of substrate production for the different crops (species, cultivar).
France	CUN2003/017	Orchard - replant	53 t (1997)	25	4	25 t	MBTOC recommends that 25t be approved. MBTOC recognizes that perennial crop replant disease is a problem for which alternatives to MB are generally not adequately proven. MBTOC also acknowledges that the applicant has made significant reductions in use of MB since 1995 and that the request is a 55% reduction from the amount used in 2000. Orchard is strip treated at a reduced rate and VIF is applied. The main constraint to the adoption of alternatives is the inability to definitively identify what is causing replant disease.

Party	CUN Number	(a) Industry	Reported past use (unofficial)	Quantity nominated		Recomm- mendation for 2005	Comment
				/year	Years		
France	CUN2003/018	Eggplant, pepper, tomato	452 t (1997)	150 (all solanaceous crops)	4	150 t	MBTOC recommends that 150t be approved, contingent on the use of emission reduction technologies e.g. VIF film and reduced dosage rates. MBTOC recognises that applicant has identified technically feasible alternatives such as 1,3-D/Pic and metham sodium by drip, but these are not registered. Significant attempts to reduce MB usage have been made by the Party. Applicant needs to provide a clearer phase-out plan for MB and specific CUE amounts required for each individual crop, including justification of why substrates and other non-MB technologies could not be used to grow at least part of the crop.
France	CUN2003/019	Strawberry - runners	100 t (1997)	40	4	40t	MBTOC recommends that 40t be approved. The CUN states that MB seems necessary to meet certification standards for plant hygiene. MBTOC acknowledges that France has a reduce range of alternatives available in practice, because products containing chloropicrin are not registered. The nomination did not provide comparative data that other alternatives do or do not provide the same disease tolerance threshold as MB. MBTOC is also unclear about the status of herbicides to control weeds. The applicant does not discuss the potential for plug plants produced in substrates and hydroponics to replace MB. MBTOC considers plug plants a possible alternative and Parties may wish to reduce the CUE quantity to take into account progressive adoption of this non-MB technology. MBTOC understands that further development is required before complete adoption is possible. The applicant has shown that MB amounts can be reduced by use of VIF, but indicates that they are difficult to use on a broad acre basis. MBTOC recognises the reduction in MB of over 50% since 1997 and encourages the applicant to consider further reductions in amounts by adopting better VIF films which substantially reduce emissions.
France	CUN2003/020	Strawberry fruit - protected and open field	200 (1997)	90	4	90t	MBTOC recommends that 90t be approved, on the basis that products containing chloropicrin do not become available before 2005. MBTOC acknowledges that France is in a difficult situation, because it can not use any products containing chloropicrin because they are not registered. France has accepted that 1,3-D/Pic is a feasible alternative and CUE should only be granted on the basis that France continue to seek registration of this product. This registration would also halve the amount of methyl bromide required for future CUNs. In spite of granting a CUE, the applicant fails to discuss the potential for substrates and hydroponics to replace MB. MBTOC understands that further development of substrates may be required before complete adoption is possible.
Greece	CUN2003/021		980 t (1997) All crops	300-350t (all crops)			MBTOC is unable to assess CUNs from this Party on the basis of the information provided. The specific quantity of MB needed for particular crops was not provided. Specific consideration of alternatives by crop is needed, preferably including comparative trials with alternatives. There are a number of clear alternatives to MB, including substrate production and metham sodium, with improved application techniques that are apparently alternatives to the MB uses nominated.
Greece	CUN2003/021	-a Beans - protected				(c)	MBTOC is unable to complete its evaluation of this CUN on the basis of available information. The Party is requested to provide CUNs for individual crops. The CUN did not specify the quantity of MB requested for each crop. Specific consideration of alternatives is needed, preferably including comparative trials with alternatives. Production of beans (green or dried) is not typically carried out elsewhere with the aid of methyl bromide (but see CUNs 2003/007 and 2003/031). There are a number of clear alternatives to MB, including substrate production and metham sodium, with improved application techniques that are apparently alternatives to the MB uses nominated. The Party notes the availability of several alternatives.
Greece	CUN2003/021	-b Cucurbits - protected				(c)	MBTOC is unable to complete its evaluation of this CUN on the basis of available information. The CUN did not specify the quantity of MB requested for the crop. Specific consideration of alternatives is needed, preferably including comparative trials with alternatives. Production of cucurbits in protected cultivation is carried out elsewhere without the aid of methyl bromide. There are a number of clear alternatives to MB, including substrate production and metham sodium, with improved application techniques that are apparently alternatives to the MB uses nominated. The Party notes the availability of several alternatives.
Greece	CUN2003/021	-c Eggplant - protected				(c)	MBTOC is unable to complete its evaluation of this CUN on the basis of available information. The CUN did not specify the quantity of MB requested for the crop. Specific consideration of alternatives is needed, preferably including comparative trials with alternatives. Production of cucurbits in protected cultivation is carried out elsewhere without the aid of methyl bromide. There are a number of clear alternatives to MB, including substrate production and metham sodium, with improved application techniques that are apparently alternatives to the MB uses nominated. The Party notes the availability of several alternatives.
Greece	CUN2003/021	-d Peppers - protected				0t	MBTOC is unable to recommend this CUN, on the basis partly of evaluation of similar CUNs by other Parties. The Party did not state the requested MB tonnage for peppers. At a national level MB reductions have been made by the introduction of VIF- and reduced doses (25-30 g/m2). The applicant identified, Meloidogyne incognita, as the only target pest relevant to pepper. Combinations of registered products in Greece would appear feasible. According to the applicant, registered products include 1,3-D (including EC formulation), oxamyl, cadusafos, fosthiazate, fenamiphos, diazomet, sodium tetrathocarbonate and these should be sufficient to control Meloidogyne in the absence of methyl bromide. Substrates are technically effective for protected crops in Mediterranean regions, although investment costs may present a barrier.

Party	CUN Number	(a) Industry	Reported past use (unofficial)	Quantity nominated		Recomm- mendation for 2005	Comment
				/year	Years		
Greece	CUN2003/021	-e Strawberry - protected				Tonnes	(c) MBTOC is unable to complete its evaluation of this CUN on the basis of available information. The CUN did not specify the quantity of MB requested for the crop. Specific consideration of alternatives in relation to this crop is needed, preferably including comparative trials with alternatives. There are a number of clear alternatives to MB, including substrate production and metham sodium, with improved application techniques, that are apparently alternatives to the MB uses nominated. The Party reports very good results with several chemical alternatives, but does not indicate why these cannot be used. A 1-3D/Pic mixture has been recently registered but no validation trials with this alternative are presented.
Greece	CUN2003/021	-f Tomato - protected		?			(c) MBTOC is unable to recommend a CUE on the basis of the available information. The CUN did not specify the quantity of MB requested for the crop. Specific consideration of alternatives in relation to this crop is needed, preferably including comparative trials with alternatives. There are a number of clear alternatives to MB, including substrate production and metham sodium, with improved application techniques that are apparently alternatives to the MB uses nominated. The Party reports very good results with several chemical alternatives that are registered in Greece (e.g. 1,3-D, metham sodium, dazomet, oxamyI, cadusafos, toshiazate, fenamiphos, sodium tetrathiocarbonate), but does not indicate why these cannot be used. The Party's research on protected tomato production concluded that 1,3-D, metam (injected) and dazomet combined with other treatments (eg,cadusafos or oxamyI) provided good control of nematode populations including root knot nematode. At a national level MB reductions have been made by the introduction of VIF and reduced doses (25-30 g/m ²).
Israel	CUN2003/022						MBTOC is unable to recommend a CUE for any nominations from this Party, as insufficient information was available for full evaluation. No comparative data or references are available to validate the performance of alternatives against MB. Although MBTOC recognises that local restrictions on the use of major alternatives to MB, chloropicrin (large buffer zones) and 1,3-D/Pic (groundwater restrictions), mean that some MB may be justified, information is insufficient to determine this amount. For most of the crops in this nomination, only a limited number of alternatives are considered.
Israel	CUN2003/022	-a Cut flowers - protected	700 t	4	175		(c) MBTOC is unable to recommend a CUE on the basis of the available information, but notes that similar CUNs by other Parties have been supported at reduced allocations or not recommended on the basis of availability of alternatives. In spite of significant data and information gaps, MBTOC recognises that the Party faces registration and regulatory constraints with typical chemical alternatives used elsewhere, e.g. 1,3-D is not registered and chloropicrin use is prohibited in populated areas. Attempts to reduce consumption of MB by changing formulations, rates, etc. are not described, although total consumption has apparently decreased and significant effort has been made to reduce emissions through mandatory adoption of VIF tarps. Further replicated research trials (e.g. with substrates, steam, as appropriate) should be conducted to generate data to substantiate/relute claims and support/deney resubmission for further rounds of CUN's. Specific crops (flower types) and problems should be identified and amounts of MB needed for each case indicated.
Israel	CUN2003/022	-b Melon -protected & field	700 t	4	315		(c) MBTOC is unable to recommend a CUE on the basis of the available information. In spite of significant data and information gaps, MBTOC recognises that the Party faces registration and regulatory constraints with typical chemical alternatives, e.g. 1,3-D is not registered and chloropicrin use is prohibited in populated areas. MBTOC acknowledges that specific diseases in open fields in Israel form the basis of the CUN (e.g. control of <i>Moronesporascus cannonballus</i> and <i>Fusarium oxysporum</i>). However, insufficient discussion on alternatives, especially the use of resistant varieties, has been given. No discussion is given on the suitability of substrates for melon production. Attempts to reduce consumption of MB by changing formulations, rates, etc. are not described, although total consumption has apparently decreased and significant effort have been made to reduce emissions through mandatory adoption of VIF tarps. Further information on alternatives is required to generate data to substantiate/relute claims and support/deney resubmission for further rounds of CUNs.
Israel	CUN2003/022	-c Potato	600 t		385		(c) MBTOC is unable to complete its evaluation of this CUN on the basis of available information. Although not stated it was assumed that the request was for potato seed. It is not possible to determine to what extent crop losses are incurred on a given hectare and how much this represents of the total crop grown. Where insufficient information was provided MBTOC attempted to use information from other CUNs but this was a unique CUN and therefore a recommendation could not be made. The Party is requested to further justify why the CUN is for a unique situation requiring use of MB as potatoes are grown elsewhere without the use of MB.
Israel	CUN2003/022	-d Propagation material	120 t	10	85		(c) MBTOC is unable to recommend a CUE on the basis of the available information. The CUN represents a 42% reduction of the reported historical usage of methyl bromide. As submitted the application does not define what is meant by propagation materials, what type of propagation materials are involved nor if these are certified nursery materials. No information is given on the cropping system (open field, protected, etc.), on the alternatives evaluated, or data on results of these evaluations. The CUN has stated that all alternatives tested are inferior to methyl bromide in cool soil conditions and that phytotoxicity due to short plant-back times are a concern. No discussion was given as to suitability of substrate production as an MB alternative. MBTOC notes that significant attempts have been made to reduce consumption of MB by reducing rate of application to 50 g/m ² and to reduce emissions by use of VIF tarps.

Party	CUN Number	(a)	Industry	Reported past use (unofficial)	Quantity nominated		Recomm- mentation for 2005	Comment
					/year	Years		
Israel	CUN2003/022	-e	Strawberries - runners & fruit, protected and open field	250 t	140	3	(c) Tonnes	MBTOC is unable to complete its evaluation of this CUN on the basis of available information. The CUN is a combined submission for both open fields and greenhouses and covers both nursery and fruit production without providing specific information, about individual industries and situations. No characteristics about nursery production are provided and no detailed technical information, about alternatives are given. MBTOC notes that CUNs applying to apparently similar applications have been submitted by other Parties.
Italy	CUN2003/023		Eggplant - protected	582 t (1995) 300 t (2001)	280t	4	137.2t	MBTOC recommends that a reduced CUE of 137.5t of MB be approved, to allow time for recently registered alternatives to be deployed. MBTOC is unclear if 1,3-D/Pic is registered or being registered for this CUN. CUE is recommended and calculated on the basis that the industry uses VIF films to minimise emissions and does not exceed 30g/m2 for MB/Pic formulations and 60g/m2 for hot gas MB. MBTOC considers that further dosage reductions may be possible by the adoption of MB/Pic formulations with lower doses of MB (eg. 70:30, 67:33 and 50:50). MBTOC noted the Party's efforts in reducing MB usage and emissions.
Italy	CUN2003/024		Melon - protected	498 t (1995) 257 t (2001)	180	4	88.2t	MBTOC recommends that a reduced CUE of 88.2t of MB be approved, to allow time for recently registered alternatives to be deployed. CUE is recommended and calculated on the basis that the industry uses VIF films to minimise emissions and does not exceed 30g/m2 for MB/Pic formulations and 60g/m2 for hot gas MB. Clarification of the registration status of chloropicrin and 1,3-D/Pic for this CUN is sought. MBTOC considers that further dose reductions may be possible by the adoption of MB/Pic formulations with lower doses of MB (eg. 70:30, 67:33 and 50:50). MBTOC noted the Party's efforts in reducing MB usage and emissions.
Italy	CUN2003/025		Cut flowers, bulbs protected	594 t (1995) 302 t (2001)	250	1	105t	MBTOC recommends that a reduced CUE of 105t of MB be approved, to allow time for recently registered alternatives to be deployed. CUE is recommended and calculated on the basis that the industry uses VIF films to minimise emissions and does not exceed 30g/m2 for MB/Pic formulations and 60g/m2 for hot gas MB. MBTOC notes that substrate culture is widely used for cut flower production. MBTOC considers that further dose reductions are possible by the adoption of MB/Pic formulations with lower doses of MB (eg. 70:30, 67:33 and 50:50). Clarification of the registration status of chloropicrin and 1,3-D/Pic as alternatives is sought. MBTOC noted the Party's efforts in reducing MB usage and emissions. Party should specify amounts needed for each flower species or group. The Party is requested to clearly identify why substrates, steam and resistant varieties (particularly in the case of fusarium wilt) are not technically suitable, especially when used within an IPM approach.
Italy	CUN2003/026		Pepper - protected	781 t (1995) 290 t (2001)	220	1	0t	MBTOC is unable to recommend this CUN. MBTOC notes MB use has been reduced using VIF and 2 year intervals between applications (doses are 50 g/m2, MB/Pic 98:02). Several alternatives/combinations appear to be available in Italy for controlling the target pests (Meloidogyne spp. and fungal pathogens) in protected peppers. The CUN notes that chloropicrin and 1,3-D are registered separately, and 1,3-D/Pic is registered for greenhouses and being adopted by commercial fumigators. MBTOC notes that Italy has pepper varieties resistant to Meloidogyne (some at high soil temperature). Italian authors have noted the efficacy of metam or dazomet + 2-3 week solarisation, and that nematocides provide effective control of nematodes in Italy. Substrates are technically feasible in Mediterranean regions.
Italy	CUN2003/027	-a	Strawberry- runners	100 t (2001)	100	1	50t	MBTOC recommends a reduced quantity of 50 t of MB be approved, to allow time for recently registered alternatives to be deployed. The reduction has been calculated on the basis that emission reduction strategies are adopted, with associated dosage reduction, use of fumigant mixtures with a reduced concentration of MB and progressive adoption of alternatives. In some protected environments, where hot gas MB/Pic 98:2 may be the only option available, a maximum rate of 60g/m2 has been used to calculate recommended CUE amounts. CUN2003/026 notes that chloropicrin and 1,3-D are registered separately, and 1,3-D/Pic is registered for greenhouses and being adopted by commercial fumigators.. MBTOC recognises efforts made by Party to reduce MB use and emissions. Substrates and hydroponic production are technically feasible alternatives in similar climatic regions to this CUN.
Italy	CUN2003/027	-b	Strawberry - fruit	1502t (1995) 603 t (2001)	510	1	255t	MBTOC recommends a reduced quantity of 255 t of MB be approved as a CUE. The reduction has been calculated on the basis that emission reduction strategies are adopted, with associated dosage reduction and use of fumigant mixtures with a reduced concentration of MB and progressive adoption of alternatives. In some protected environments, where hot gas MB/Pic 98:2 may be the only option available, a maximum rate of 60g/m2 has been used to calculate recommended CUE amounts. Clarification of the registration status of chloropicrin and 1,3-D/Pic is sought. MBTOC recognises efforts made by the Party to reduce MB use and emissions. Substrates and hydroponic production are technically feasible alternatives in other similar climatic regions.

Party	CUN Number	(a)	Industry	Reported past use (unofficial)	Quantity nominated		Recom-mendation for 2005	Comment
					/year	Years		
Italy	CUN2003/028		Tomato - protected	1500 t (2001)	1300	1	(c)	MBTOC is unable to complete its evaluation of this CUN on the basis of available information. MBTOC is unable to verify the specific circumstances for which MB is requested, because regions are aggregated in this nomination. MBTOC notes that dosage rates of methyl bromide have increased from former rates. A reduction in the area cropped to tomatoes has not been reflected by a reduction in MB use. The CUN notes that chloropicrin and 1,3-D are registered separately, and 1,3-D/Pic is registered for greenhouses and being adopted by commercial fumigators. Substrates, hydroponic production, grafted plants and alternative fumigant(s) are technically feasible alternatives for this crop in similar climatic regions to that for this CUN, though this CUN notes water supply may limit substrate use.
Japan	CUN2003/029	-a	Melon	188 t (1998)	94.5	3	47.3t	MBTOC recommends a reduced quantity of 47.3t of MB be approved as a CUE, to take into account a maximum rate of 30 g/m ² , the use of VIF and the use of mixtures of MB/Pic (67:33). The quantity of MB nominated is 75% of current use. Resistant varieties have inferior yield qualities. MBTOC considers that MB/Pic mixtures (67:33; 50:50) may be technically suitable. MBTOC notes that there is no use of soilless culture, an MB alternative typically adopted elsewhere. A number of viruses occur in single, double and triple cropped cucurbit varieties in Japan. Control is dependent on rapid penetration of MB through soil, often treatment is in cool conditions, and no alternatives are reportedly effective.
Japan	CUN2003/029	-b	Watermelon	92 t (1998)	71.4	3	35.7t	MBTOC recommends a reduced quantity of 35.7t of MB be approved as a CUE, to take into account a maximum rate of 30 g/m ² , the use of VIF and the use of mixtures of MB/Pic (67:33). The quantity of MB nominated is 75% of current use. Resistant varieties have inferior yield qualities. MBTOC considers that MB/Pic mixtures (67:33; 50:50) may be technically suitable. MBTOC notes that there is no use of soilless culture, an MB alternative typically adopted elsewhere. A number of viruses occur in single, double and triple cropped cucurbit varieties in Japan. Control is dependent on rapid penetration of MB through soil, often treatment is in cool conditions, and no alternatives are reportedly effective.
Japan	CUN2003/029	-c	Peppers - protected	112 t (1998)	74.1	3	37.0t	MBTOC recommends a reduced quantity of 37.0t of MB be approved as a CUE, to take into account a maximum rate of 30 g/m ² , the use of VIF and the use of mixtures of MB/Pic (67:33). The quantity of MB nominated is 75% of current use. Resistant varieties have inferior yield qualities. MBTOC considers that MB/Pic mixtures (67:33; 50:50) may be technically suitable. MBTOC notes that there is no use of soilless culture, an MB alternative typically adopted elsewhere. The CUN does not consider steam (known to be effective for some viruses) and substrates as potential alternatives to MB. The CUN noted that dry heat treatment of seed gave good but not perfect results, but does not provide comparative data with MB. Japanese research has identified two sweet pepper cultivars resistant to PMMoV.
Japan	CUN2003/029	-d	Cucumber	42.4 t (1998)	39.4	3	19.7t	MBTOC recommends a reduced quantity of 19.7t of MB be approved as a CUE, to take into account a maximum rate of MB application, the use of VIF and the use of mixtures of MB/Pic (67:33). The quantity of MB nominated is 75% of current use. Resistant varieties have inferior yield qualities. MBTOC considers that MB/Pic mixtures (67:33; 50:50) may be technically suitable. MBTOC notes that there is no use of soilless culture, an MB alternative typically adopted elsewhere. A number of viruses occur in single, double and triple cropped cucurbit varieties in Japan. Control is dependent on rapid penetration of MB through soil, often treatment is in cool conditions, and no alternatives are reportedly effective.
Portugal	CUN2003/031							MBTOC is unable to assess CUNs from this Party in its entirety on the basis of the available information. Specific consideration of alternatives by crop is needed, preferably including comparative trials with alternatives. There are a number of clear alternatives to MB, including substrate production and metham sodium, with improved application techniques that are apparently alternatives to at least some of the MB uses nominated.
Portugal	CUN2003/031	-a	Strawberry - protected and open field		30	4	15t	MBTOC recommends this CUN on the basis of similar CUNs by other Parties, with a reduced allocation of 15t on the basis of use of reduced dosages of MB (30 g/m ²) in conjunction with VIF films. The industry presently uses MB/Pic (98:2) at high rates in the range from 65 g/m ² to 80 g/m ² . Application method is not stated.
Portugal	CUN2003/031	-b	Cut flowers - protected and open field		130	4	50t	MBTOC recommends this CUN on the basis of similar CUNs by other Parties, with a reduced allocation of 50t on the basis of use of reduced dosages of MB in conjunction with VIF films. The industry presently uses MB/Pic (98:2) with VIF but at a very high rate (80 g/m ²). Application method is not stated. The application states that particularly the flower market is growing due to increasing national and international interest and investments in this sector, motivated by a most favourable combination of both climatic and environmental conditions. About 14% of growing area is MB treated, but the CUN does not indicate what proportion of this area is suitable for recognised alternatives such as substrate culture.
Portugal	CUN2003/031	-c	Tomato- protected and open field		20	4	(c)	MBTOC is unable to complete its evaluation of this CUN on the basis of available information. The industry presently uses MB/Pic (98:2) at high rates of 70 g/m ² . Application method is not clear. From other CUNs and MBTOC information, there appear to be a number of alternatives for this crop and situation, together with scope for substantial reduction in MB use when combined with emission control technologies or formulation changes.

Party	CUN Number	(a) Industry	Reported past use (unofficial)	Quantity nominated		Recomm- mentation for 2005	Comment
				/year	Years		
Portugal	CUN2003/031	Peppers - protected and field		5	4	(c)	MBTOC is unable to complete its evaluation of this CUN on the basis of available information. The industry presently uses MB/PIC (98:2) at high rates of 70 g/m ² . Application method is not clear. From other CUNs and MBTOC information, there appear to be a number of alternatives for this crop and situation, together with scope for substantial reduction in MB use when combined with emission control technologies or formulation changes. The CUN does not provide technical comparisons of efficacy of alternatives. The CUN notes that an alternative, 1,3-Dimethiam sodium, is cheaper than MB. Substrates are technically effective for protected crops including peppers in Mediterranean regions. Portuguese experts notes that steam is technically effective but the investment cost may be a barrier.
Portugal	CUN2003/031	Watermelon - protected and open field		4	4	(c)	MBTOC is unable to complete its evaluation of this CUN on the basis of available information. The industry presently uses MB/PIC (98:2) at high rates of 70 g/m ² . Application method is not clear. From other CUNs and MBTOC information, there appear to be a number of alternatives for this crop and situation, together with scope for substantial reduction in MB use when combined with emission control technologies or formulation changes.
Portugal	CUN2003/031	Melon - protected		5	4	(c)	MBTOC is unable to complete its evaluation of this CUN on the basis of available information. The industry presently uses MB/PIC (98:2) at high rates of 70 g/m ² . Application method is not clear. From other CUNs and MBTOC information, there appear to be a number of alternatives for this crop and situation, together with scope for substantial reduction in MB use when combined with emission control technologies or formulation changes.
Portugal	CUN2003/031	Green bean - protected and open field		3	4	(c)	MBTOC is unable to complete its evaluation of this CUN on the basis of available information. The basis for the CUE is not clear - the CUN is for the control of aerial diseases (Alternaria, Cladosporium, Botrytis) that are not normally controlled with MB or other soil fumigants.
Portugal	CUN2003/031	Cucumber - open field		3	4	(c)	MBTOC is unable to complete its evaluation of this CUN on the basis of available information. The stated basis for the CUN, control of foliar diseases, are not normally a target for MB and can be controlled by other means. Feasibility of alternatives has not been validated, although the CUN states that two (unidentified) alternatives may be available. The rates of MB used with VIF appear excessive.
Spain	CUN2003/032	Strawberry runners	406 t (1998)	230	2+	230 t	MBTOC recommends that 230t of MB be approved. The CUN states that MB is required to meet EU certification standards and local regulations, but does not provide data that other alternatives do not provide adequate disease control to meet the standard. The CUN has presented results which show a number of alternatives are technically feasible for pathogen control, but most generally fail to give adequate weed control. MBTOC is unclear about the status of herbicides to control weeds. MBTOC considers plug plants grown in hydroponics a possible alternative, but time and cost appears to be preventing the adoption of this technology. MBTOC understands that further development is required before complete adoption is possible. The CUN indicates that the most promising alternative for open field production of nursery plants, a 1,3-D/Pic mixture, has been quite successfully used in combination with VIF films. The CUN states VIF films are difficult to use on a broad acre basis. The industry is to be commended on already reducing amounts by adoption of 50:50 mixtures, the use of 20-40g/m ² of MB and is encouraged to further reduce amounts by adopting improved emission control technology.
Spain	CUN2003/033	Cut flowers (Cadiz & Seville) - protected	est. 2150 t (1998)	53	ndefinite	53 t	MBTOC recommends that 53t of MB be approved. The CUN provided data and references which show that a number of alternatives which MBTOC considers are technically suitable have failed to give consistent results. The Party is requested to show why substrate production and use of resistant varieties are also technically suitable, particularly when used within an IPM approach. MBTOC recognises the very substantial reduction of MB use from high historical levels and also of emissions by adoption of MB/Pic mixtures (67:33), low rates (10g/m ² MB) and VIF films.
Spain	CUN2003/034	Cut flowers (Catalonia) - carnation, protected and open field	23 - 47t	20	ndefinite	20t	MBTOC recommends that 20t of MB be approved. MBTOC recognises the very substantial reduction of MB use from high historical levels and also of emissions by adoption of MB/Pic mixtures (e.g. 67:33), low rates (10g/m ² MB) and VIF films. The CUN does not give evidence that the alternatives for this use are inappropriate in the circumstances of this nomination. In particular, MBTOC notes substrates are used in other major carnation production regions around the world, metham sodium, steam and resistant varieties have also been found technically suitable, particularly when used within an IPM approach.
Spain	CUN2003/035	Strawberry fruit - open field	1846 t (1998)	556	1?	556 t	MBTOC recommends a CUE of 556t, contingent on the non-availability of alternatives, notably 1,3-D/Pic. The Party may wish to reduce its nomination to account for phasing in of alternatives prior to 2005. MBTOC notes that there are several technical feasible alternatives for this use, but they may require time to introduce into the industry. Since 1998, the industry has also made major reductions in the use and emissions of MB by adoption of MB/Pic mixtures (50:50%), VIF films and low rates (10.6 g /m ² MB).

Party	CUN Number	(a) Industry	Reported past use (unofficial)	Quantity nominated		Recomm- mentation for 2005	Comment
				/year	Years		
Spain	CUN2003/036	Peppers - protected	574 t (1998)	300 t (98.2) or 200 t (67.33)	1?	150 t	MBTOC recommends a CUE of 150t, contingent on the non-availability of alternatives, notably 1,3-D/Pic. The Party may wish to reduce its nomination to account for phasing in of alternatives prior to 2005. The CUN states that a particular formulation of 1,3-D/Pic may also be as effective as MB and has been adopted at commercial level in Spain for peppers. 1,3-D/Pic + grafted plants give good results, similar to MB. MBTOC acknowledges that the industry has also made major reductions in the use and emissions of MB by adoption of MB/Pic mixtures (50:50), VIF films and low rates (10.6 g/m ² MB). Several alternatives are available for peppers in Spain. Substrates are used for 10% of production of peppers, usually with greater yield than MB.
UK	CUN2003/039	Ornamental tree nurseries	20 t (1998)	12	1	6t	MBTOC recommends that a reduced allocation of 6t be approved, with the reduction on the basis of use of VIF with lowered rates of MB, possibly in conjunction with chloropicrin. MBTOC has determined that the propagation of healthy plant propagation material is an area where methyl bromide alternatives may not be fully effective and thus supports this CUN. The industry presently uses MB/Pic (formulation not stated) at rates of 75-100 g/m ² . Significant attempts have been made to reduce emissions by adoption of VIF tarps and deep injection. The higher than normal rates may be necessary because of the depth of soil treatment involved. Contaminated plant systems would appear to be technically feasible alternatives for this CUN. As submitted, the CUN partially substantiates that most of the possible alternatives reported by MBTOC are technically inappropriate, but does not discuss substrates and steaming.
UK	CUN2003/040	Strawberries & raspberries - fruit	785 t (1998)	80	2	68t	MBTOC recommends that a reduced allocation of 68t be approved for this CUE, on the basis of reduced dosage rates being used. The CUN states that dazomet, metham sodium, and 1,3-D can give good control, but approval would need to be sought for use in combinations as presently mixtures are not registered in the UK. Applicant states that substrates have been tried commercially but they are considered uneconomic. The CUN relies heavily on overseas studies for its conclusions. Significant attempts have been made to reduce emissions by adoption of VIF tarps, treatment of beds rather than broadcast treatments and deep injection.
USA	CUN2003/049	Cucurbits - field	1267 t (1998)	1187.8	3	(c)	MBTOC is unable to complete its evaluation of this CUN on the basis of available information. This nomination did not give comparative data, except some yields, to determine the technical feasibility of many alternatives and their comparative performance compared to MB under the circumstances of the nomination. The nomination states that metham sodium is a technical alternative for southern US States with low to moderate nutgrass pressure and requests MB be given a CUE for 25% of production of the total US crop. The nomination does not discuss key alternatives reported by MBTOC, e.g. 1,3-D/Pic and grafting, and does not explain why herbicides cannot be used for control of nutgrass, the main reason for use of MB in southeastern USA (representing 98% of that requested). Although there has been a change from 98% to 67% MB in formulations to date, no further plan has been presented to reduce emissions.
USA	CUN2003/050	Eggplant - field	191 t (1998)	73.6	1	(c)	MBTOC is unable to complete its evaluation of this CUN on the basis of available information. This nomination did not give comparative data, except some yields, to determine the technical feasibility of many alternatives and their comparative performance compared to MB under the circumstances of the nomination. The nomination does not discuss key alternatives reported by MBTOC. MBTOC notes that control of nutgrass is difficult where herbicides or other measures cannot be used and there are areas where alternatives are not available through local restrictions (e.g. township caps). Although there has been a change from 98% to 67% MB in formulations to date, no further plan has been presented to reduce emissions. MBTOC has recommended that MB for a CUE be applied with VIF films or other emission reduction technology, combined with reduced rates of MB.
USA	CUN2003/052	Forest nursery seedlings	545.5 t (1998)	192,515	1	(c)	MBTOC is unable to complete its evaluation of this CUN on the basis of available information. This nomination did not give comparative data to determine the technical feasibility of many alternatives and their comparative performance compared to MB under the circumstances of the nomination. The CUN finds that two chemical alternatives are considered technically feasible, but does not discuss the feasibility of utilising substrates and containerised plants for forest seedling production. Containerised plant systems are quite widely in use.
USA	CUN2003/053	Ginger production field	44 t (1998)	9.2	1*	9.2t	MBTOC recommends a CUE be approved for 9.2t of MB. This crop is grown under unusual terrain and can be considered a minor crop where research is lagging. Time is needed to technically evaluate application methods for alternative fumigants and other alternatives. CUE is recommended on the basis that the industry uses systems to minimise emissions and does not exceed 30g/m ² of MB (present use 42g/m ²).
USA	CUN2003/055	Fruit tree nurseries	230 t (1998)	45,789	1*	45.8t	MBTOC recommends a CUE for 45.8t of MB be approved, based partly on evaluation of similar CUNs from other Parties. The CUN notes that use of a particular alternative be restricted because of local regulations and technical efficacy on heavy textured soils. The CUN contained no references to support lack of efficacy of alternatives compared to methyl bromide. The nomination also states that MB is required to treat substrates in the citrus industry, but does not explain why steaming and soilless substrates (containerisation) have not been considered a technical option for seedling production and tree production outdoors. Although there has been a change from 98% to 67% MB in formulations to date, no further plan has been presented to reduce emissions. MBTOC has recommended that MB for a CUE be applied with VIF films or other emission reduction technology, combined with reduced rates of MB.

Party	CUN Number	Industry	Reported past use (unofficial)	Quantity nominated		Recomm- mentation for 2005	Comment
				/year	Years		
USA	CUN2003/056	Orchard replant	1691 t (1998)	706,176	1*	706.2t	MBTOC recommends that 706.2t be approved for this CUN. Whilst it was difficult to make a recommendation based on the lack of technical data provided or references for the specific crops in the nomination, MBTOC noted that the industry is aware of the technically available alternatives and appears to be making an effort to adopt these alternatives. Three alternatives, 1,3-D alone or 1,3-D combined with chloropicrin or metham sodium were considered to be technical alternatives in the CUN for treatment in light soils. The nomination appears to take this into account when calculating the nominated quantity of MB.
USA	CUN2003/057	Chrysanthemum cuttings - rose plants (nursery)	246 t (1998)	29,412	2	14.7t	MBTOC recommends that a reduced allocation of 14.7t be approved for this CUN, on the basis that feasible alternatives are available for chrysanthemum cuttings (e.g. substrates) and adoption of reduced dosages with emission control strategies. MBTOC noted that the industry is aware of the technically available alternatives and appears to be making an effort to adopt these alternatives. From the case presented MBTOC is unable to recommend a CUE for chrysanthemums as steaming and production in substrates are technically and economically feasible. Roses are successfully grown in substrates worldwide. The Party may wish to recalculate the nomination on the basis of use of reduced MB dosages combined with emission control technologies, and a availability of alternatives.
USA	CUN2003/058	Peppers - field	1943 t (1998)	1085.3	1*	(c)	MBTOC is unable to complete its evaluation of this CUN on the basis of available information. MBTOC notes that a number of alternatives are in commercial use for this crop and seeks further information, on the applicability of these alternatives, noting that the availability may be restricted by local regulations.
USA	CUN2003/059	Strawberry fruit - field	2757 t (1998)	2468,87	1*	(c)	MBTOC is unable to recommend a CUE on the basis of the available information, but notes that control of nutgrass is difficult where herbicides or other measures cannot be used and there are areas where alternatives are not available through local restrictions (e.g. township caps). As confirmed by the CUN, MBTOC suggests that 1,3-D combined with either chloropicrin or metham sodium are feasible alternatives to MB in the circumstances of the nomination. To date over 10% of the industry has already converted to the use of formulations of 1,3-D/Pic in some regions. MBTOC recognises that application issues, plant back times and reliability restrict adoption of other fumigant alternatives by the industry.
USA	CUN2003/060	Strawberry runners	313 t (1998)	54,988	1*	55t	MBTOC recommends that 55t be approved. MBTOC notes that the applicant has not technically verified that any alternatives are feasible. The CUN states that MB is required to meet certification standards, but does not provide data that other alternatives do not provide the same disease tolerance threshold to satisfy these standards. The CUN also does not consider plug plants grown in hydroponics a possible alternative, but MBTOC considers this technology a technically feasible alternative, but understands that further development is required before complete adoption is possible. The Party may wish to reduce the CUN to account for plug plant development as an alternative. The industry already uses low dosage rates of MB and is encouraged to try to further reduce amounts by adopting further emission control technology and MB formulations with lower rates of MB (e.g. MB/Pic 50:50).
USA	CUN2003/061	Sweet potato - field	246 t (1998)	224,528	1*	(c)	MBTOC is unable to complete its evaluation of this CUN on the basis of available information. The CUE is based on a contingency of double the land use requiring fumigation with MB. Where insufficient information, was given by a country for a specific crop in this round of CUE, MBTOC attempted to fill in the missing data on alternatives or lack of them wherever possible using MBTOC's technical knowledge or, if considered relevant data provided by other applicants from other countries. However, this is the only CUE submitted for MB use on sweet potatoes. The CUN has provided information, suggesting that alternatives may be available for 2005 cropping season.
USA	CUN2003/062	Tomato - field	4,495 t (1998)	2865	2	(c)	MBTOC is unable to recommend a CUE on the basis of the available information, but notes that control of nutgrass is difficult where herbicides or other measures cannot be used and there are areas where alternatives are not available through local restrictions (e.g. township caps). It is also requested that the Party calculate the revised amount consistent with the use of low dosages of methyl bromide in formulations such as MB/Pic (67:33 or 50:50). The nomination noted that a range of alternatives were considered technically feasible for areas of low inoculum levels of pathogens and weeds (e.g. 1,3-D/Pic and metham sodium). Formulations of metham sodium are proving effective at least in some regions.
USA	CUN2003/063	Turfgrass	600 t turf growing (1998), 102 t golf courses (1998)	352,194	1*	(c)	MBTOC is unable to complete its evaluation of this CUN on the basis of available information. The nomination covers several uses of MB, including the establishment and maintenance of golf courses, and production of turfgrass sod. Some or all of the sod may be certified, although no supporting documentation was provided about the certification tolerance requirements. An unspecified quantity of MB is reported to be used as a quarantine treatment for red fire ants in sod. Insufficient information, was provided to enable MBTOC to judge whether this might be a QPS treatment. It is requested that these differing uses of MB be disaggregated and the amounts presented as separate CUNs. In the case of golf course maintenance, some technically feasible alternatives have been reported. The nominated quantity may be revised in consideration of adoption of emission reduction strategies.
(a)							
(b)							
(c)							

Appendix B: Evaluation of Critical Use Nominations – Post Harvest & Structures

Party	CUN Number	Industry	Type	Quantity nominated		Recommen- dation for 2005 Tonnes	MBTOC recommendation* for the critical uses of methyl bromide for the specific circumstances described by the applicant
				t/year	Years		
Australia	CUN2003/004	Rice	Commodity	12.3	3	12.3	MBTOC recommends that 12.3 tonnes be approved. MBTOC noted that there were no technically feasible alternatives for the specific circumstances of this nomination. The Party is requested to clarify details of reduced dosages to be used, and reduced quantities of commodity to be fumigated
Canada	CUN2003/008	Pasta and Flour Mills	Structures	47.2	2	47.2	MBTOC recommends that 47.2 tonnes be approved. MBTOC noted more than 50% of the Canadian mills were reported not to use MB and that there were technically feasible alternatives apparently available. The one alternative, regarded as promising by industry, is not yet registered. The Party is requested to ensure that the CUE is restricted to those premises unable to use the alternatives.
France	CUN2003/012	Old buildings and artefacts	Structures and objects	8	4	0	MBTOC was unable to recommend this CUN. Alternatives are available for this use.
France	CUN2003/012	Mills and Processors	Structures	55	4	55	MBTOC recommends that 55 tonnes be approved, conditional on confirmation that the use will be restricted to those structures unable to be treated with available alternatives.
France	CUN2003/012	Chestnuts	Commodity	2.0	4	2.0	MBTOC recommends that 2.0 tonnes be approved. MBTOC noted that there were no technically feasible alternatives for this use.
France	CUN2003/011	Commodities other than rice	Commodity	8.0	4	(a)	MBTOC was unable to complete its evaluation of this CUN on the basis of available information. MBTOC considered that technically feasible alternatives are available for most commodities in the application but that there may be some commodities in some situations that do not have alternatives.
France	CUN2003/012	Rice	Commodity	2.0	4	2.0	MBTOC recommends that 2.0 tonnes be approved. MBTOC noted that there were no technically feasible alternatives for the specific circumstances of this nomination.
Japan	CUN2003/029	Chestnuts	Commodity	4.6	1	4.6	MBTOC recommends that 4.6 tonnes be approved. MBTOC noted that there were no technically feasible alternatives for this use.
Netherlands	CUN2003/030	Cut flowers (postharvest)	Commodity	1.2	1	0	MBTOC is unable to recommend this nomination for a CUE, as it is likely that some or all of the quantity requested is likely to be exempt from control under the QPS exemption. Additional information is sought to clarify the status of the MB use. No alternatives were considered.
United Kingdom	CUN2003/037	Food storage (dry goods)	Structures	1.1	2	1.1	MBTOC recommends that 1.1 tonnes be approved. MBTOC recommended 1100 kg of methyl bromide for 2005. MBTOC noted that there were technically feasible alternatives but the one regarded as most promising by industry was not yet registered.
United Kingdom	CUN2003/038	Mills and Processors	Structures	30,752	2	30.8	MBTOC recommends that 30.8 tonnes be approved. MBTOC recommended 35,000 kg of methyl bromide for 2005. MBTOC noted that there were technically feasible alternatives but the one regarded as most promising by industry was not yet registered.
United Kingdom	CUN2003/041	Food storage (spices)	Structures	1,728	2	1,728	MBTOC recommends that 1,728 tonnes be approved. MBTOC recommended 1,728 kg of methyl bromide for 2005. MBTOC noted that there were technically feasible alternatives but the one regarded as most promising by industry was not yet registered.
United Kingdom	CUN2003/044	Mills and Processors	Structures	16,38	2	16.38	MBTOC recommends that 16.38 tonnes be approved. MBTOC recommended 16,380 kg of methyl bromide for 2005. MBTOC noted that there were technically feasible alternatives but the one regarded as most promising by industry was not yet registered.

Party	CUN Number	Industry	Type	Quantity nominated		Recommen- dation for 2005 Tonnes	MBTOC recommendation* for the critical uses of methyl bromide for the specific circumstances described by the applicant
				t/year	Years		
United Kingdom	CUN2003/045	Rice	Commodity	1,0	2	0	MBTOC was unable to recommend this CUN. MBTOC noted that there were technically feasible alternatives for this use. Furthermore, the nominated use appears to be potentially a QPS MB treatment against <i>Trogoderma granarium</i> , and thus exempt from control.
United Kingdom	CUN2003/037	Whitworth	Commodity	2,4	2	2,4	MBTOC recommends that 2,4 tonnes be approved. MBTOC noted that there were a number of apparently feasible alternatives that may be suitable for some of this nomination but the one regarded as most promising by industry was not yet registered.
United Kingdom	CUN2003/046	Cheese stores (traditional)	Commodity	0,140	2	0,140	MBTOC recommends that 140 kg be approved. MBTOC noted that there were no technically feasible alternatives for this use.
United Kingdom	CUN2003/047	Cheese stores (traditional)	Commodity	1,50	2	1,50	MBTOC recommends that 1,5 tonnes be approved. MBTOC noted that there were no technically feasible alternatives for this use.
United Kingdom	CUN2003/042	Stored spices	Commodity	0,030	2	0,030	MBTOC recommends that 30 kg be approved. MBTOC noted that there were no technically feasible alternatives registered in the UK for this nomination.
United Kingdom	CUN2003/043	Tobacco (stored)	Commodity	0,523	2	0	MBTOC was unable to recommend this CUN. MBTOC noted that there were technically feasible alternatives for this use in the United Kingdom and other countries.
United States	CUN2003/051	Mills and Processors	Structures	536,328	1	536,328	MBTOC recommends that 536 tonnes be approved, conditional on there being no registered alternatives available in 2005. MBTOC noted that at the time of evaluation in March 2003 there were no technically feasible alternatives for this use.
United States	CUN2003/048	Smokehouse Ham	Commodity	0,907	1	0,907	MBTOC recommends that 0,907 tonnes be approved. MBTOC noted that there were no technically feasible alternatives for this use.
United States	CUN2003/048	Dried fruit, beans & nuts	Commodity	86,753	1	86,753	MBTOC recommends that 87 tonnes be approved, conditional on there being no registered alternatives available in 2005. MBTOC noted that at the time of evaluation in March 2003 there were no technically feasible alternatives for this use.
United States	CUN2003/054	Nursery trays for tobacco	Object	1,323	1	0	MBTOC was unable to recommend this CUN. MBTOC noted that alternatives are in common use in similar circumstances in several countries. These alternatives include chlorine, irradiation, fungicides, steam and quaternary ammonium compounds.

Footnote:

(a) Evaluation not completed, pending further clarification sought from the nominating Party