Critical use nominations for methyl bromide use submitted in 2008

Information requested by paragraph 7 of decision Ex.1/4

(a) Nominating Party: Japan		
1.	(b) Title of nomination	JAP01 CUN10 Soil Melon
	(c) Crop	Melon
	(d) Quantity of methyl bromide	90,800 kg (CUN09:168,000 kg)
	(e) Reasons why alternatives to methyl bromide are not technically and economically feasible	As soil treatment, every available measures are taken to control diseases such as seed sterilization, field sanitation with removal of previous plant debris but disease symptoms occasionally emerged on plants meaning those measures are insufficient. Mixture of 1,3-Dechloropropene and chloropicrin for the control of MNSV could cause phytotoxicity with remaining gas in the field soil if gas is not completely removed from the soil. So it needs two times more for plant back time than methyl bromide resulting in delay of planting and more labor to plowing soil for degassing. Any substitute is not registered for CGMMV yet. Resistant Melon strains to CGMMV and/or MNSV are under search of which quality should be same as available varieties. Melon seedling with attenuated CGMMV is under way to develop. Methyl iodide is under registration review, however, because of its possible phytotoxicity occurrence and higher price, there is a concern that it could not be penetrated easily among farmers. Vapor heat treatment is very costly in the general growing regions. Substitute cultivation with small bag is of high facility construction fee, depreciation fee and running cost that are not suitable appropriation for the harvest revenue. Particularly, a water supply technique needs higher manageable knowledge which be too complicate and too difficult for general farmers for ensuring suitable yields. There are the reasons why majority of farmers do not feel incentive to apply this cultivation system and alternatives to methyl bromide are not technically and economically feasible.
2	(b) Title of nomination	JAP02 CUN10 Soil Watermelon
	(c) Crop:	Watermelon
	(d) Quantity of methyl bromide	15,400 kg (CUN09: 23,700 kg)
	(e) Reasons why alternatives to methyl bromide are not technically and economically feasible	As soil treatment, every available measure is taken to control a disease such as seed sterilization, field sanitation with removal of previous plant debris but disease symptoms sometime appear. No other pesticides similar to methyl bromide are developed to control a CGMMV disease on watermelon. Currently there are no technically and economically feasible alternatives

		corresponding to methyl bromide. Resistant stock plants for grafting and variety is under search. Hydroponics or substitute cultivation does not attract farmers because facility construction fee, depreciation fee and running cost are not much of a catch for the revenue. Some of watermelon growers have replaced with other crops in which cultivation no methyl bromide is used, resulting in less CUN quantity for 2010 than that for 2009.
3	**(a) Title of nomination**	**JAP03 CUN10 Soil Cucumber**
	(b) Crop:	Cucumber
	(c) Quantity of methyl bromide	34,100 kg (CUN09: 61,400 kg)
	(d) Reasons why alternatives to methyl bromide are not technically and economically feasible	Beside soil treatment, every available measure are taken to control disease such as seed sterilization, field sanitation with removal of previous remaining plants and disease symptom emerged plants. No other pesticides more effecttive than methyl bromide are developed to control KGMMV. There are not technically and economically feasible alternatives. Tests are now under way to control KGMMV such dipping seedling in extract of *Lentinus edodes* mycelia just before planting. Also, resistant cucumber strain is now breeding by using a gene mutational technique under radioactive irradiation. Hydroponics and substrate cultivation are not penetrated because facility construction fee, depreciation fee and running cost are very expensive which is not equal to revenue obtained by cucumber sales when price is lower.
4	**(b) Title of nomination**	**JAP04 CUN10 Soil Pepper**
	(c) Crop:	Pepper
	(d) Quantity of methyl bromide	81,100 kg (CUN09: 134,400 kg including 10kg for research)
	(e) Reasons why alternatives to methyl bromide are not technically and economically feasible	There is no substitute to control PMMoV. However, resistant pepper stocks for hot pepper (Anou 4 gou and 5 gou) are bred, carrying resistant gene (*L*^{3}) or (*L*^{4}), for grafting of which patents will be applied in near future. Those stocks are under field tests for practical cultivation. Moreover, green pepper resistant varieties (Bagu 1 gou and L4 Miogi) are currently available. A green pepper seedling with an attenuated virus of PMMoV is under development, however, it could be less yield and lower quality and poor fruit appearance. Antagonistic micro-organisms to bring inhibition capability for an infection through soil is now under research. A scissors disinfection device for harvest is under development to inhibit infection of the virus. The planting pot method is developed by easily wrapping root with decomposed paper to guard pepper root from PMMoV contact infection just after transplantation of seedlings. Much effort have been made though, those

		efforts could not be applied to the actual agricultural practice because those technologies are not mature to be introduced for actual cultivation practice. Substitute cultivation in a small bag is of high facility construction fee, depreciation fee and running cost which are not balanced with the yield revenue. Particularly, a water supply technique needs higher manageable knowledge which, is thought, is too complicate and too difficult for general farmers for suitable yields. It is not accepted for commercial production. There are the reasons why majority of farmers do not feel incentive to apply this cultivation system.
5	**(b) Title of nomination**	**JAP05 CUN10 Soil ginger field**
	(c) Crop:	Ginger field
	(d) Quantity of methyl bromide	53,400 kg (CUN09: 102,200 kg)
	(e) Reasons why alternatives to methyl bromide are not technically and economically feasible	Field soil treatment for Ginger is carried out in the cold season in the region of critical use nomination. Compared with methyl bromide, alternatives such as dazomet, MITC, chloropicrin, mixture of 1,3D and chloropicrin and mixture of 1.3D and MITC need longer plant back time to avoid phytotoxicity and to ensure expected efficacy to control a disease. Longer plant back time means significant delay of ginger seed rhizome planting, resulting in shorter growing time with far less yield than by methyl bromide treatment. Furthermore, those alternatives do not necessarily show effectiveness enough to control a disease in stand and in storage. It means significant reduction of the yield which means alternatives are not economically feasible. Propamocarb hydrochloride and cyazofamid were lately registered to apply in stand, not for soil treatment. Those alternatives are used to mitigate damage of disease infection which is not useful to avoid yield reduction. Metalaxyl granule is not used because a disease control has been found difficulties due to an occurrence of chemical resistance fungal strains. Chloropicrin is not used in the field close to the residential area and to the road because of its pungent odor to people. Likewise, Japan has spent much effort to register alternatives so far, however, they are found several difficulties to use in such area of critical use nomination. Those alternatives are not penetrated because of longer plant back time, insufficient efficacy to control a disease occurrence in stand and in the storage. Farmers are not used to apply them because it was registered lately to be immature to use for soil treatment. As soil treatment before planting in ginger cultivation, farmers make much effort to avoid a disease occurrence by performing the better drainage, the use of non diseased rhizome seed plants raised in the isolated field, the supply of water free from a

		disease, and immediate removal of infectious plant from the field. Japan has been very eager to develop alternatives such as methyl iodide, phosphate acid and mixture of azoxystrobin and metalaxyl-M to register. Therefore, it is terribly necessary to use methyl bromide for complete soil disinfection in the area of critical use nomination for 2010.
6	**(b) Title of nomination**	**JAP06 CUN10 Soil Ginger protected**
	(c) Crop:	Ginger protected
	(d) Quantity of methyl bromide	8,300g (CUN09: 12,900 kg)
	(e) Reasons why alternatives to methyl bromide are not technically and economically feasible	Alternatives are not economically feasible. In general, ginger in protected house is a crop to which previous crop is either cucumber or pepper. For the cost saving and intensive use of field in the protected house for the higher performance of the cultivation, annually two crops of either pepper or cucumber are consecutively raised as the first crop following ginger cultivation as the second crop. Plant back time of alternatives is usually far longer than use of methyl bromide. Therefore, when any kind of alternatives used, cultivation period of either the first crop or ginger could be shorten, resulting in significant yield decrease for either crop. It is not economically feasible to raise temperature by heating soil in the protected house due to the rocket jumping price of crude oil. Moreover, soil temperature is not necessarily uniform in the soil over the all field. Therefore, any alternatives are not economically feasible in the area of critical use nomination. However, ginger raising farmer gradually get to use those alternatives as a transition measures. That is the reason why quantity of critical use nomination is getting the decrease year by year. Japan has made much effort to develop alternatives for the registration. However, it needs time for the ginger farmers to manage those alternatives for the control of the disease. Currently, they introduce every means for the control of a disease occurrence such planting ginger seed rhizome from disease free isolated field, intake of disease free water from water source far from cultivation field and immediate removal of the infectious plants when it is found. They have done every measure as possible as they can. So they wish to use methyl bromide for the complete sterilization of the ginger field to attain the satisfactory yield in the region of critical use nomination.
7	**(b) Title of nomination**	**JAP07 CUN10 Chestnut for post-harvest**
	(c) Commodity	Chestnut
	(d) Quantity of methyl bromide	5,400 kg (CUNo9: 5,800 kg)

	(e) Reasons why alternatives to methyl bromide are not technically and economically feasible	Methyl iodide is now under agrochemical registration review. Registration authorities have given a preference to it on review process, however, it is not clear when it will have done. After the registration is completed, it could be used as an alternative to methyl bromide for the applicants of critical use nomination. Beyond the registration process, there could be other concerns. Raw material of methyl iodide is iodine which is collected and refined from iodide-containing salt water under deep in the ground. When the ground subsidence due to pumping up of massive underground salt water would be found over an acceptable limit, it is not allowed in registration to pump water up any more to avoid further ground subsidence. This means a fundamental limiting factor to use methyl iodide. In addition, iodine is also used as a manufacturing material of liquid crystal display, which should brought soaring of iodine price and thus making it difficult to supply manufacturing methyl iodide to agricultural use with a lower price in the future.