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Minimising quarantine and pre-shipment (QPS) uses of methyl bromide

Tools for controlling, monitoring and reporting

United Nations Environment Programme

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Executive Summary

"Controlled uses of methyl bromide have been drastically reduced with immediate benefit to the ozone layer; but continued QPS uses prevent further benefits being realised. QPS uses of methyl bromide are major potential sources of ODS emissions if not appropriately managed."

The Montreal Protocol (Protocol) on Substances that Deplete the Ozone Layer came into effect in 1987. Protecting the ozone layer is extremely important as it prevents harmful ultraviolet (UV) rays from reaching the Earth's surface. Scientists have shown that without the Protocol, ozone layer destruction would have allowed UV radiation levels to increase to extremely high levels with disastrous effects on all forms of life. In 1992, the Protocol listed Methyl Bromide (MB) as an Ozone Depleting Substance (ODS). When emitted into the atmosphere the MB molecules break, releasing bromine, which aggressively destroys ozone.

Commercially, MB was used as a soil fumigant for many decades to control weeds, pests and pathogens that can attack many crops and cause severe losses. This fumigant was also used to disinfest food-processing and storage buildings, as well as commodities such as grains, beans and dried fruit. Since alternatives were available or under development for these uses, they were labelled as *controlled* under the Protocol and the Parties agreed to their phase-out, setting different timelines for developing countries that operate under Article 5 of the treaty ("A5 Parties") and developed countries ("non-A5 Parties"). A provision was left for *critical uses*, i.e. uses that were especially difficult to replace under strictly specific circumstances.

Methyl bromide has also been traditionally used as a treatment to control pests and pathogens of quarantine importance on various traded goods. These treatments are known as '*Quarantine and Pre-shipment*' (QPS) uses and can be performed by the exporting country at time of shipment or upon arrival by the importing country. As a QPS treatment, MB facilitates trade and also prevents accidental import of exotic pests. In 1992, the international community considered that there were no feasible alternatives for QPS treatments and that limiting use of MB would put international trade and the livelihood of many agricultural sectors at risk.

Such treatments were thus *exempted* from Protocol controls. Parties were nevertheless encouraged to minimise these QPS uses and to adopt alternative treatments whenever possible. As of 1 January only critical uses of MB are permitted in both A5 and non-A5 Parties. Developing country Parties have made great strides in phasing out controlled (i.e. non-QPS) uses of methyl bromide, thanks to the financial and technical assistance provided by the Protocol's Multilateral

Fund. As a result, MB use is now almost entirely for QPS.

QPS consumption[1] has remained relatively stable over the last 15 years at an approximate average of 11,000 metric tonnes per year. Data reported under the Protocol show that there is a general tendency for MB QPS consumption in A5-Parties to increase, whilst that of non-A5 Parties has decreased overall. The Asia-Pacific region is the largest consumer of MB for QPS purposes. The reported increases in A5 Parties may be linked to expanded international trade, however some Parties also raised the concern that MB imported for QPS purposes could be diverted into controlled uses. Establishment and enforcement of a reliable system to monitor actual consumption of MB is thus essential to ensure continued compliance with the Montreal Protocol. This requires in first instance a clear understanding of the differences between controlled and exempted uses as well as a robust legal framework, mechanisms to track MB uses, awareness raising, training and capacity building.

Most current QPS uses of MB are highly specialised, and have been used with very good success for a long time. Different species of pests and pathogens may be considered as quarantine pests by different countries and this will vary according to the particular situation of each country. Each country thus has a specific list of quarantine pests and requirements, which may encompass import permits, phytosanitary certificates, additional declarations and/or treatments and other relevant export information and documentation. There are cases where a pest that is common or endemic in one country is considered a quarantine pest in another.

Since 1992, several Decisions of the Montreal Protocol have concerned QPS uses of MB. Some of the issues raised by these Decisions include a request for clarification of the definitions of QPS, requirement of detailed evaluations of specific QPS uses of MB and their potential alternatives, and asking Parties to submit information on the details of QPS uses.

[1] The Protocol definition: Consumption = Production + Import – Export of controlled substances

The Parties to the Montreal Protocol are required to report by September 30 of each year on the production, import, export, consumption, feedstock uses and destruction of all ODS, including MB produced or consumed for QPS purposes. Presently, however, only total quantities of MB produced or consumed for QPS need to be reported. Parties are not required to report details on the MB- QPS application for different categories of use (i.e. commodities treated). With this limitation in data access and given the diversity of treatments involved, it is difficult to evaluate the QPS uses and to find or recommend alternatives for specific categories. It is also complex to monitor MB for QPS uses and to ensure accuracy in classification and exemptions.

The definition of 'quarantine' found in the Protocol follows closely the definition of quarantine used by the International Plant Protection Convention (IPPC). However, the concept of "Pre-shipment" is specific to the Montreal Protocol. The IPPC develops *International Standards for Phytosanitary Measures* (ISPMs), which are guidelines and recommendations recognised by the World Trade Organization. Some of these standards include procedures that can replace or avoid MB uses in quarantine (i.e. are suitable alternatives), whilst others seek to minimise MB use. The Protocol and the IPPC cooperate to ensure that their shared objectives are met and that the information on the existing alternatives for QPS purposes is shared among Parties.

MB uses for QPS are diverse. The Methyl Bromide Technical Options Committee (MBTOC), an advisory body of the Protocol, has estimated that there are five principal QPS applications of MB: Sawn timber and wood packaging material (ISPM-15); grains and similar foodstuffs; logs; pre-plant soil fumigation for production of propagation materials (considered a QPS use by one Party only); and fresh fruit and vegetables. In response to various Decisions of the Protocol, MBTOC estimated that it is feasible to replace 32–42% of the MB used for QPS with alternatives presently available across the four main categories of use.

Various A5 Parties have expressed concern over potential illegal trade and/or illegal uses of MB. To avoid this, Parties need to have reliable, use-specific, reporting and tracking processes on the use of MB produced, imported and or exported. Stakeholders in the public and private

sectors need to be adequately trained and sensitised. This is of paramount importance in sustaining the purpose and objectives of the Protocol for the management of the phase-out of MB.

Efficient tracking of MB for QPS applications requires close monitoring, timely information exchanges with trading partners, and a full understanding of both non-exempted and exempted uses. Some good examples of efficient tracking have been put in place in various countries for example Turkey, Malaysia, and Japan. The IPPC has developed a list of articles typically fumigated with MB for QPS purposes, which facilitates collection and reporting of MB usage data. Countries can make modifications of the IPPC guidelines in accordance to each Party's circumstances and may vary when the intended use is for either quarantine or for pre-shipment.

Some National Quarantine authorities have also developed local codes of practice or similar schemes to ensure best efficiency of methyl bromide treatments. For example, use of best management practices for QPS treatment of commodities minimises losses due to leakage prior to venting at the end of treatment, and maximises effectiveness of a particular dosage of methyl bromide.

Since agricultural products are potential carriers of quarantine pests and pathogens, expanding or maintaining their market access may be a complex process requiring substantial commitment to research and development. Typically, several years are needed to develop an effective disinfestation treatment that is acceptable to an importing country Thorough coordination between industry, packing houses, technical providers, fumigators, exporters, regulatory bodies and researchers is needed.

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