Commission on Phytosanitary Measures

**STRATEGIC PLANNING GROUP**

Discussion Paper

Reduction and Replacement of Methyl Bromide as Phytosanitary treatment in Pakistan

*(Submitted by: Pakistan)*

Pakistan’s agricultural exports, particularly rice, maize, sesame seeds, citrus fruits, mangoes, vegetables, hold immense potential in global markets. However, the country's ability to fully capitalize on this potential is hindered by challenges in meeting international Sanitary and Phytosanitary (SPS) standards, which restrict access to key export destinations such as China, the European Union (EU), Australia and the United States. To overcome these barriers, Pakistan must align its SPS measures with international standards, ensuring compliance with IPPC and WTO-SPS regulations. Strengthening the Plant Protection Departments at federal and provincial levels, enhancing pest risk analysis, phytosanitary measures, improving traceability systems, and building the capacity of stakeholders on SPS requirements will be critical in reducing trade rejections, expanding market access, and fostering sustainable economic growth.

The Montreal Protocol

The Montreal Protocol on Substances that Deplete the Ozone Layer is the landmark multilateral environmental agreement that regulates the production and consumption of ozone depleting substances (ODS). Methyl bromide (MB) was phased out under the Montreal Protocol by 2005 for non-Article 5 (developed) countries and by 2015 for Article 5 (developing) countries, with ongoing exemptions for Quarantine and Pre-Shipment (QPS) uses, which now represent the largest remaining consumption of the substance.

Methyl Bromide as a Phytosanitary treatment

In Pakistan Methyl bromide has been widely used as a store grain pest control treatment for many decades. Most uses of methyl bromide as a phytosanitary measure are for the treatment of durable commodities, such as grains, cereals and dried foodstuffs, wood packaging materials, wood and logs.

Pakistan’s Efforts for Replacement of Methyl Bromide Use as a Phytosanitary Measure

Department of Plant Protection which is NPPO of Pakistan has taken the following steps to reduce the use of MB as a phytosanitary treatment:

1. Amendment in legislation
2. Revised Import Conditions of Plant and Plant Material.
3. Guidelines on use of MB and Trainning of accredited fumigation companies
4. Ban on mandatory phytosanitary Treatment with MB
5. Replacement of MB by Implementation of systems approaches, pest free areas, areas of low pest prevalence, pest free places of production, pest free production sites and equivalence.
6. NPPO of Pakistan’s acceptance of alternatives treatments of MB in import consignments

Significant reduction in use of MB in Pakistan in 2025

Due to the corrective measures/ steps taken by DPP, a significant reduction (more than 50%) in the use of methyl bromide is observed as mentioned in the table below:

|  |  |  |
| --- | --- | --- |
| **MONTH** | **2024** | **2025** |
| **Consumption (KGs)** | **Consumption (KGs)** |
| **JANUARY** | 58,207 | 31,239 |
| **FEBRUARY** | 74,382 | 21,677 |
| **MARCH** | 67,945 | 10,437 |
| **APRIL** | 33609 | 24,610 |
| **MAY** | 42,731 | 18,141 |
| **JUNE** | 37,801 | 33,220 |
| **JULY** | 42,306 | 30,930 |
| **AUGUST** | 25,744 | 28,680 |
| **SEPTEMBER** | 20,873 | 19,699 |
| **OCTOBER** | 21,863 | ..... |
| **NOVEMBER** | 24,772 | ..... |
| **DECEMBER** | 29,820 | ..... |
| **TOTAL:** | **480,054** | **218,632** |

**Source**: Department of Plant Protection data center Pakistan

Pakistan is focusing on the following alternatives phytosanitary measures for export / import consignments of plant and plant material:

1. Cold Treatment (citrus fruits)
2. Hot Water Treatment (Mangoes)
3. Irradiation Treatment (fruits and vegetables)
4. Heat Treatment (wooden pallets)
5. Use of aluminum phosphide treatment instead of MB for the control of store grain pest.
6. The imported grains are meant for human consumption and are part of the food chain, devitalization is unnecessary. Instead, a strict monitoring system should be enforced to prevent their use for sowing and to ensure no pest infestation occurs through imported grains.
7. Plants and Plant Material already notified commodities that will not be fumigated on arrival if standardized treatment done prior to the shipment at place of origin and found free from insect pest, noxious weeds, sign & symptoms of pathogens as per rule of PPQR-2019.
8. Immediate commodity processing (Grains/seeds for oil extraction are being directly milled on arrival without devitalization with MB)

NPPO of Pakistan Regulatory Steps to Reduce Use of MB

**62nd agricultural pesticides technical advisory committee (APTAC) decision in 2025**

* For revisions of import conditions, in line with scientific evidences, allowing any internationally accepted phytosanitary treatments at the country of origin, rather than mandatory methyl bromide fumigation and explore effective use of a system approach as an alternative to MB-based devitalization for achieving phytosanitary objectives.
* In Pakistan, Methyl Bromide is predominantly used for imports rather than exports. Therefore, there is a need for scientific input from the Technical Committee to identify and recommend suitable alternatives to Methyl Bromide on scientific lines.
* In Pakistan, Methyl Bromide is being used at a dosage of 80 g/m³ for 72 hours, primarily for the devitalization of oil seeds/grains. However, consultations with other National Plant Protection Organizations (NPPOs), such as those of Australia and Canada, have revealed that effective devitalization requires significantly higher dosages ranging from a CTP (Concentration-Time Product) of 6,000 to 15,000 g-h/m³. These higher doses often exceed the maximum allowable chemical residue limits, while the current 80 g/m³ dosage is insufficient for effective devitalization. Notably, Australian regulations prohibit the fumigation of canola with Methyl Bromide due to food safety and public health concerns, as it renders the commodity unfit for human consumption. The World Health Organization (WHO 1995) recommended zero tolerance for methyl bromide residue in rapeseed (canola) in 1995.
* It is well established that high-oil-content products readily absorb chemicals from direct application or contact with treated surfaces.

Pakistan’s NPPO legal acceptance of Alternatives of MB

Globally, agro-commodities are treated with phosphine or other suitable alternatives to Methyl Bromide, both onshore and in transit, for effective pest control. These treatments leave minimal to no chemical residues in grains, oilseeds, and pulses.

**For devitalization of grains,** a systems-based approach covering the entire supply chain is adopted in many countries and acceptable to Pakistan. It is essential that consignments be pest-free, packed in new polypropylene (PP) bags, and transported under conditions that prevent spillage or contamination route to a registered processing facility. The oil extraction process at such facilities involves temperatures exceeding 100°C, which further supports the devitalization process.

Under the **Pakistan Plant Quarantine Rules, 2019 (PPQR-2019),** any consignment found to contain a invasive quarantine pest should be re-exported to the country of origin. While, current import conditions require that every consignment be fumigated with Methyl Bromide at the port on arrival (at dosages ranging from 32 to 80 g/m³), regardless of whether any pests are detected, which lacks technical justification. This practice does not align with the International Plant Protection Convention (IPPC) guidelines, which advocate for equivalency of treatment based on scientific evidence. In recognition of this issue, Department of Plant Protection, NPPO Pakistan has issued two circulars aimed at preventing redundant or double fumigation of MB for 90 commodities, provided no live insect pests are detected during inspection.

NPPO of Pakistan Circulars regarding MB treatment:

The Plant Protection Advisor and Director General, issued circular that commodities that will not be fumigated on arrival if standardized treatment done prior to the shipment and found free from insect pest, noxious weeds, sign & symptoms of pathogens while previously subjected to mandatory treatment of methyl bromide.

NPPO of Pakistan Way forward and Recommendations:

A systems approach is a viable option, as outlined in ISPM 14 (The Use of Integrated Measures in a Systems Approach for Pest Risk Management) that is being effectively utilized by several WTO Member countries to achieve the objective of pest risk management.

As per Article 9 of the WTO SPS Agreement, the Department of Plant Protection (DPP) Pakistan, on 19 March 2025, formally sought technical assistance from countries such as Indonesia, Japan, China, the European Union, Canada, Brazil, and the United States in the area of pest risk management, through effective phytosanitary measures, including the adoption of a systems approach.

**In the light of information provided by International agro-trade partners it is decided:**

1. As per Article 2(d) of the International Plant Protection Convention (IPPC), disinfestation or disinfection of consignments shall be carried out in the country of origin instead of country of destination using mutually agreed treatments that meet the appropriate level of protection.
2. As stated above, treatment with methyl bromide at 80 g/m³ for the prescribed duration is not effective in devitalizing seeds, and therefore, its use for this purpose should be discontinued.
3. The Department of Plant Protection (DPP) will complete the risk assessment and finalize appropriate risk management measures, including the systems approach, through bilateral protocols where necessary, at the earliest possible time (within 3 month).
4. It is relevant to point out that system approach essentially includes verification/ accreditation of each step of the processing in country of origin and likewise similar action in country of destination.
5. In the event of a first violation of phytosanitary regulations, a notice of non-compliance will be issued to the exporting country. Further violations may result in appropriate actions in accordance with Article VII (1)(b) of the IPPC.
6. The Ministry of Climate Change may be sensitized to strengthen regulatory controls, as laid down in the license, to ensure that GM soybeans are used strictly for their intended purposes i.e., food, feed, and processing (FFP) instead of use of heavy dose of MB for devitalization of grains.