MAJOR ENVIRONMENTAL ISSUES
&

ENVIRONMENTAL GUIDELINES UNDER ENVIRONMENT MANAGEMENT FRAMEWORK (EMF)

OF

WORLD BANK FUNDED HP HORTICULTURE DEVELOMENT PROJECT

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Brief Background of Environment & Social Management Framework:

HP Horticulture Development Project aims at increasing the productivity of apple from the 625199 MT (current) to 1467802 MT by the year 2030 through project interventions in the State. To manage this production level, the project envisages upgradation of fourteen existing markets and creation of two new markets. Apart from this there is a provision to create thirty common service centres, enhance the capacity of existing five Controlled Atmosphere (CA) stores and six pack houses. Besides, green field investments to create new five CA stores, one Cherry Hydro-cooling facility and twelve pack houses with sorting, grading and packing facilities. While such infrastructure activities are taken up, social and environment impacts are not ruled out. Thus it is important to mainstream Environmental and Social considerations in project planning, implementation and monitoring to mitigate potential adverse impacts and to improve the effectiveness and sustainability of the project.

Objectives

- To develop a generic Environmental Management Plan (EMP) and framework to address environmental issues arising during planning, design, construction and operation phase.
- To assist in establishing criteria to identify the level of environmental assessment required for the project and the processes involved in conducting assessment studies for various components/phases of the Project.

Screening of activities on the basis of impact on the basis of Environmental impacts:

Project activities/ interventions have been categorised into two categories, based on its impact on the environment:

I. Low- Moderate Impact Activities (Application of Environmental Guidelines/best practices in the design and operational phase)

- Water harvesting, distribution, Irrigation systems
- Post entry quarantine (PEQ) and demonstration orchards
- Pesticides and Fertilizers- application, use and storage
- Pest and Disease Surveillance
- Community Service Centre (CSC) at village level
- Operation of Farmer Producer Organizations
- Interventions related to climate change resilience
- Storage & Marketing of Inputs and Produce

II. Moderate- High Impact Activities (Assessed on a case to case basis for requirement of EIA/EMP):

- Agri-processing Centers, Pack Houses, Cold Storage, CA storage with sorting grading and packing facilities, Market Yards, Effluent treatment plants, Access Roads and connectivity.

II. Project Interventions, impacts, risks and potential mitigation measures:

Component A: Horticulture Production and Diversification:

- A1. Enhancing availability and adoption of elite planting materials and horticulture technology transfers

Risks:

- ☞ Pest or disease outbreak in the stoolbed or nursery.
- ☞ Release of diseased planting material from nurseries.

Potential mitigation measures:

- Existing and identified sites (PCDOs) are screened.
- Project functionaries to be provided due training
- Nurseries are being established at different sites
- Imported plants are inspected by a designated inspection authority (DIA)- Department of Pathology, UHF.

Promoting Climate Resilient Technologies and Adoption (Area expansion, Replanting, Scientific orchard management, develop minor community irrigation systems, post-harvest management & Establishment Centre of Excellence):

Impacts:

- Improper disposal of construction debris.
- Possibility of pollution of ground water sources.
- Downstream flow is impacted due to the construction of various irrigation schemes.

Risks:

- ☞ Obstructing natural course of flow of water may impact already existing minor irrigation systems.
- Increase in the use of pesticides and other agrochemicals with potential downstream impacts on human health and pollution of sub-surface water, aquatic and soil ecosystems.
- Risk of procurement of banned pesticides.
- Lack O&M plan for post project sustainability of WHS
- Felling of trees for creating village level CSC or Village ponds
- Siltation in water harvesting structures

Potential mitigation measures:

- Encourage farmers to opt for special measures like drip irrigation systems, integrated crop management practices.

- Awareness programmes on using pesticides.
- Training of farmers to adopt IPM, INM.
- Environmental Guidelines for soil and water conservation, water harvesting structures, and soil nutrient management have been developed for design and operational phase.
- **B: Value Addition and Agri-enterprise Development**

B1 Product aggregation and sale through producer associations (FPCs, CSCs- 30 no.)

Impacts:

- Contaminated water disposal after washing the fruits and vegetables
- Disposal of packing material, especially non-bio degradable.
- Increase in solid waste due to packaging material
- Top soil removal during the construction of various infrastructures.

Risks:

- ☞ Small and marginal farmers, women and tribal may be required to give up land for sitting of CSCs.
- ☞ Improper storage of inputs (pesticide, fertilizer and organic manure) may lead to spills/leaks and lead to contamination of soil and water
- ☞ Improper disposal of waste can damage land and create pollution.

<u>Potential mitigation measures:</u>

- land requirement would be fulfilled by existing land of HPMC /Horticulture. Further
- screening would be undertaken to assess if there are any adverse impacts.
- Educating farmers to overcome reluctance to store produce.
- Encourage vericomposting using biodegradable waste involving local SHGs to take this as a micro enterprise. This will provide additional revenues and gainful employment.

III. Project interventions with severe environmental impacts and not complying with the policies/regulations will not be promoted:

A. Purchase, stock, sale, distribution or exhibition of the following pesticides will not be supported:
   - ☞ Pesticides classified in Class Ia, Ib and II of WHO classification;
   - ☞ Pesticides banned by the Government of India and State Government.
   - ☞ Purchase, stock, sale, distribution or exhibition of pesticides and chemical fertilizers without the requisite license.

B. Extraction of ground water in any form from notified areas- Poanta & Nahan Civil Sub-divisions of Sirmaour Distt.; Nalagarh & Solan Civil Sub-divisions of Solan Distt.; Una & Amb Civil Sub-divisions of Distt. Una; Nurpur & Jawali Civil Sub-division of Distt. Kangra, as per Himachal Pradesh Ground Water (Regulation & Control of Development and Management) Act 2005, without taking required permission from the Executive Engineers of Irrigation & Public Health Department will not be supported.
C. No activity will be carried out in Critical or Endangered Natural Habitats.
D. Construction of roads, buildings, check dams, embankments, etc., will not be supported without prior approval of the design by a qualified Engineer.
E. Embankment / check dam exceeding 10 meters in height will not be supported.
F. Activities involving direct/untreated discharge into any water body any industrial waste, sewerage or other polluting substances.
G. Any industrial activity without effluent treatment plant will not be supported.

IV. Major Environment Safe Guard Issues related to HP Horticulture Development Project

Sr. No.	Environmental Issues	Recommended Action
1.	Pest or disease outbreak in the stool-bed or nursery & release of diseased material from nurseries to orchards.	Post Entry Quarantine regulations and monitoring protocols will be followed in compliance with the *Plant Quarantine (Regulation of import into India) order 2003* and *Post Entry Quarantine-2003.* Environmental Guidelines for Post-entry quarantine Requirements will be followed.
2.	Improper disposal of construction debris from WHS can block natural water courses and impact downstream beneficiaries.	Environmental Guidelines for Soil & Water Conservation, Water Harvesting Structures & Water Use will be followed.
3.	Downstream flow is impacted due to the construction of various irrigation schemes.	
4.	Blocking/Obstructing natural course of flow of water leading to negative impact on ground water recharging and impacting already existing minor irrigation systems	
5.	Availability of water and imported cultivars may lead to unsustainable use of available water. Individual users may not agree to use water as per the plan.	
6.	Failures in check dams/ Siltation in water harvesting structures.	

7.	Possibility of pollution of groundwater sources due to excessive use of fertilizers and pesticides.	Awareness programs on using pesticides, exposure trips, demonstration plots/ research stations for a range of stakeholders. Training of farmers on IPM and discourage use of chemical pesticides; Circulation of banned list of pesticides and insecticides as well as guidelines for pesticide management.
8.	Increased use of pesticides and other agrochemicals due to adoption of climate resilient technologies.	
9.	Increase in the use of pesticides and other agrochemicals with potential downstream impacts on human health and pollution of sub-surface water, aquatic and soil ecosystems.	
10.	Procurement of banned pesticides and non-availability of commonly used pesticides. Increased incidence of pest if the same crop is promoted repeatedly.	
11.	Use of *Cholorpicrin* for the control of *specific apple replant disease* (SARD), can be detrimental to the user and can also contaminate nearby water sources if not applied under the supervision of expert/trained staff.	*Cholorpicrin* will be applied using injector technology under the strict supervision of experts only.
12.	Felling of trees for creating village level Community Service Centre or Village ponds.	Adoption of Environmental Guidelines for storage, handling and usage of pesticides and chemical fertilizers, Integrated Pest and nutrient management. Promoting Composting/ vermin-composting of bio-degradable waste and adopted approach of reduction recycle and re-use of non-biodegradable waste, in line with The Municipal Solid (Management & handling) Rules, 2000 and Himachal Pradesh Non-biodegradable Garbage (control) Act, 1995.
13.	Improper storage of inputs (pesticide, fertilizer and organic manure) may lead to spills/leaks and lead to contamination of soil and water.	
14.	Improper disposal of waste can damage land and create pollution	
15.	Disposal of packing material, especially non-bio degradable.	
	Issues related to Supply Chain Infrastructure Support:	
16.	Improper disposal of construction debris	Infrastructure would be created after preparation of a separate EIA, EMP. Its implementation and monitoring. No activity will be carried out in Critical or Endangered Natural Habitats. Activities involving direct/untreated discharge into any water body any industrial waste, sewerage or other polluting substance will not be supported. Industrial activity, effluent treatment
17.	Solid and liquid waste disposal in construction and operational phase.	
18.	Dumping of solid wastes in non-designated area could pollute land and water resources	
19.	Top soil removal during the construction of various infrastructure	

		plant will not be supported without requisite permission from the applicable Pollution Control Board.
	Issues related to Market Development and Sector Stewardship	
20.	Drainage facilities in the APMCs release the drain water to the municipal sewage system without any treatment. Inadequate area for parking, loading etc.	All Infrastructures would be created after preparation of a separate EIA, EMP. Ensure proper drainage system and set up primary treatment facility in market yards before letting out wastewater Follow guidelines on waste disposal – both for organic and inorganic waste. Site which is suitable for construction activity, with proper drainage, space for traffic movement, will be selected. No activity will be carried out in Critical or Endangered Natural Habitats. Construction of roads, buildings, check dams, embankments, etc., will not be supported without prior approval of the design by a qualified Engineer. No activities involving direct/untreated discharge into any water body any industrial waste, sewerage or other polluting substance will be supported. Industrial activity, effluent treatment plant will not be supported without requisite permission from the applicable Pollution Control Board.
21.	Upgraded facilities for grading sorting, packing and processing is likely to increase negative impact (waste, debris disposal, approach roads etc.) on agriculture land or water bodies.	

V. ENVIRONMENTAL GUIDELINES (EGs):

The EGs are applicable in case of low to moderate environmental risk project interventions like Water harvesting and distribution, Irrigation systems, Post entry quarantine (PEQ) and demonstration nurseries, Pesticides and Fertilizers- application, use and storage, Pest and Disease Surveillance Community Service Centre (CSC) at village level, Management of Pollinators, Operation of Farmer Producer Organization/ company, Interventions related to climate change resilience, Storage & Marketing of Inputs and Produce.

As per the *Environmental & Social Management Frame Work* of the Project following Environmental guidelines and actions have been suggested for the above stated activities for the awareness and guidance of project staff and beneficiaries to adopt adequate measures to address the environmental issues and concerns during preparation, implementation and operation activities.

Environmental Guidelines and Applicable project interventions

Environmental Guideline	*Applicable project Interventions*	*Stage of Application*
Soil and Water Conservation	♦ Orchard management ♦ Water harvesting structures and minor irrigation scheme management	Design and Operation
Soil Health Management	♦ Application of Fertilizers and Organic manures ♦ Vermi-compost production and application ♦ Area Expansions, re-plantation and rejuvenation of orchards	Design and Operation
Agriculture/Horticulture	♦ Integrated crop management ♦ Scientific orchard management ♦ Area Expansions, re-plantation and rejuvenation of orchards	Operation
Water Harvesting Structures	♦ New Community irrigation schemes ♦ Improvement of existing schemes ♦ Construction of water harvesting structures, check dams, small lifts ♦ Rain water harvesting ♦ Poly lined tanks ♦ Lift irrigation ♦ Water Abstraction	Design and Operation
Water Use	♦ Formation of WUAs ♦ Fostering and capacity building of WUAs ♦ Drip Irrigation schemes	Operation
Operation of FPO/FPCs	♦ Storage and Handling of	Operation

	Inputs ♦ Common Service Centers ♦ Upgrading supply chain infrastructure ♦ Solid, Liquid Waste Management ♦ Construction of storage facilities, and installation of machinery.	

1. SOIL & WATER CONSERVATION

- ☞ Leveling of crop fields and maintenance of terraces / bunds to check water runoff and soil loss.
- ☞ Storage of surface/Rain water through water storage structures.
- ☞ Vegetative soil conservation measures around the water engineering structures (bio-engineering measures).
- ☞ All check dams must be below a height of 10m
- ☞ Quarrying for stones prior to construction of any structure in a site should be strictly prohibited.
- ☞ Site specific drainage line treatment (DLT) measures should be adopted to check the soil erosion and improve the moistures regimes.
- ☞ Use of stone riser technique for field bonding should be adopted as a preventing measure to check soil erosion.
- ☞ In case any run off from the higher hill slopes is damaging the bench terracing, diversion channels are required to be made at the upper portions to safely divert run off to drainage lines.

2. SOIL HEALTH MANAGEMENT

- ☞ Check whether bio fertilizers being used is approved for use in HP by seeking guidance from University, Dy. Director Horticulture/ Dy. Director Agriculture H.P. Govt.
- ☞ Organic manures in the form of FYM /Compost /Vermi-compost should be applied regularly to not only meet nutrient requirements of the plants but to also enhance soil biotic activity for maintaining soil health.
- ☞ Store Bio fertilizers in cool and dry place away from heat and direct sunlight.
- ☞ Bio fertilizers and treated seeds should not be mixed with chemical fertilizers, insecticides and pesticides.
- ☞ Organic manures should be applied as basal dose, preferably at the time of the last ploughing and should be incorporated into the field

- ☞ Organic manures should not be mixed with chemical fertilizers at the time of its application.
- ☞ Crop residues & weeds not being used as fuel or fodder should be incorporated into the soil or composted.
- ☞ Avoiding soil tillage (where possible) during times of the year when heavy rainfall events are likely
- ☞ To maintain biological fertility of the soil, planting of nitrogen fixing species on the crop field bunds should be done.
- ☞ Adoption of scientific orchard management practices promoted under the project in existing orchards
- ☞ Protected cultivation (use of poly-house, poly-pit, poly-trench, etc.) to reduce the chances of HYV crop failure and reduce human wildlife conflict.
- ☞ Follow POP for management of high density planting, pollination, fertility management practices, bio control agents and bio-fertilizers.
- ☞ Consider canopy protection using netting in fruit orchards to increase protection from heat stress, frosts and hail.
- ☞ Encourage participation of adopter farmers in integrated crop management (ICM) demonstrations
- ☞ To retain soil health and reduce soil contamination & water pollution, use of bio-fertilizers (bio-compost, vermicompost, organic mulch (Green manure), microbial inoculants, etc.) and bio-pesticides should be promoted.
- ☞ Use of permissible chemical pesticides should only be done in accordance to the application timings and safety measures mentioned in IPM strategy of the project.
- ☞ Encourage participation of adopter farmers to adopt post-harvest management demonstrations.

3. AGRICULTURE/HORTICULTURE:

- ☞ High nutritional value traditional crops should not be totally replaced by high yielding varieties.
- ☞ To maintain biological fertility of the soil, planting of nitrogen fixing species on the crop field bunds should be done.
- ☞ Adoption of scientific orchard management practices promoted under the project in existing orchards
- ☞ Follow POP for management of high density planting, pollination, fertility management practices, bio control agents and bio-fertilizers.
- ☞ Consider canopy protection using netting in fruit orchards to increase protection from heat stress, frosts and hail.
- ☞ Encourage participation of adopter farmers in integrated crop management (ICM) demonstrations
- ☞ To retain soil health and reduce soil contamination & water pollution, use of bio-fertilizers (bio-compost, vermicompost, organic mulch (Green manure), microbial inoculants, etc.) and bio-pesticides should be promoted.

- ☞ Use of permissible chemical pesticides should only be done in accordance to the recommended application timings, dosages and safety measures.

4. WATER HARVESTING

- ☞ Rain water harvesting and storage of surface water (of streams, Nalla, etc.) through water storage ponds/pits should be encouraged.
- ☞ Construction of Roof Rain Water Harvesting Tank will help to collect rain water for domestic uses and kitchen gardening.
- ☞ Tanks/Ponds meant for storage of harvested water should be poly-lined and also covered suitably to avoid loss of water due to percolation and evaporation respectively.
- ☞ Regular disinfection by chlorination and use of filters in storage structures will reduce chances of water borne diseases.
- ☞ Proper designing, size and site selection for channel should be ensured.
- ☞ Construction of smaller underground tanks to reduce chances of leakage.
- ☞ Use of Ferro-cement for repairs of tanks.
- ☞ Deep wells may not be dug to reduce drawing of underground water.
- ☞ Do not allow runoff from cattle-sheds, sullage, etc. to enter the pond or allow solid wastes into the farm pond.
- ☞ Fish rearing to consume the mosquito eggs.
- ☞ Rules and regulations over sharing and rational use of water to be framed by the stakeholder communities with support from NGO
- ☞ Selection of site for community water storage tanks should be as per the convenience and cooperation of stakeholders to reduce conflicts among users.
- ☞ Installation / lying of pipelines deep in the ground will reduce freezing of water and Compaction of the excavated soil in the dug pipelines
- ☞ All constructions of water related structures should be based on actual site survey and approved designs.
- ☞ Top soil removed during the process of digging ponds, trenches etc. should be used to build bunds and excess soil should be spread over the rest of the farm.
- ☞ As far as possible, WHS should be sited where there are no trees. If tree cutting is unavoidable, then compensatory planting in the ratio of 1:10 should be carried out and the beneficiary group made responsible for maintaining it with at least 90% survival till 3 years.
- ☞ Before the water is let into the pond, it should be passed through a silt filter to prevent frequent silting up of the farm pond. A simple silt filter would be a ditch that is filled with gravel and rocks through which water would flow before entering the farm pond.
- ☞ Every farm pond should also have an outlet channel to allow excess water to flow out. This would ensure that the bunds of the farm pond are not under strain when the farm pond is overflowing

5. WATER USE

- ☞ Matching water availability with crop water demand
- ☞ Compulsory use of organic mulch throughout the cropping season to minimize evaporation losses and thereby reduce water demand of crops
- ☞ Compulsory use of micro irrigation to irrigate crops in all water regimes so as to reduce absolute quantity of water applied and also increases water use efficiency. Simple low pressure, gravity fed drip systems could be used to reduce costs to the beneficiary.

6. FARMER PRODUCER ORGANIZATION (FPO)/COMPANY

- ☞ Maintain proper records of procurement and sale of pesticides specifying the brand name and name of active ingredients.
- ☞ Stock and promote sale of safety gear to be used while handling pesticides (for example, hand gloves, plastic masks, etc.).
- ☞ The FPO shall not stock, sell and promote agri-chemicals indiscriminately. It shall make strong efforts to ensure that its members follow IPM and INM and accordingly shall stock and sell inputs relevant to implementing INM and IPM.
- ☞ If pesticides are to be sold or stocked at more than one place, take separate licenses for every such place and display the license in a prominent part of the premises that is open to public.
- ☞ Do not sell pesticides in classes Ia, Ib, and II (WHO Classification of Pesticides by Hazard).
- ☞ Do not sell pesticides without ISI Mark Certification.
- ☞ Do not stock or sell any insecticide unless it is: properly packed, properly labelled and the package includes information leaflet (including safety guidelines).
- ☞ Do not change or remove any inscription or mark made by the manufacturer on the container, label or wrapper of any pesticide.
- ☞ For sale of insecticides maintain a separate register showing names and addresses of all the persons to whom it has been sold or distributed and the quantities to be sold or distributed.
- ☞ Do not sell or store pesticide in the same building where any articles consumable by human beings or animals are manufactured, stored or exposed for sale. Store in a separate room which is well built, dry, well-lit and ventilated and of sufficient size.
- ☞ Acquire license to sell, stock, exhibit and distribute pesticides from the competent authority (District Agriculture Officer).
- ☞ Coordinate with Department of Horticulture, Agriculture and *Krishi Vigyan Kendra* to provide training to farmers on integrated pest and nutrient management
- ☞ Stock and sell bio fertilizers and organic manures such as vermicompost.

- ☞ Immediately after the date of expiry segregate and stamp all such stocks as 'not for sale' and keep in a separate place with clear sign displaying that it is date-expired pesticide. Dispose these stocks in an environment friendly manner.
- ☞ Provide soil testing and fertilizer recommendation services to member farmers.
- ☞ All the organic waste (Bark & Seed of the Fruit, Pulp of Fruit and Vegetables, Decayed Fruit) should be re-used as compost for agricultural purposes.
- ☞ Ensure waste produce composting or dumping areas are well away from packing and handling facilities to avoid re-contamination of harvested produce with disease, and to avoid attracting vermin to the packing facility.
- ☞ Prevent any nutrient rich run-off from composting sites from causing contamination of waterways (surface and groundwater).
- ☞ At the CSC level, water is used for washing and other purposes. Thus proper drainage system should be in place so that the grey water can be collected in a sock pit through a drainage pipe.
- ☞ Inorganic waste (packaging material, plastic containers) should be re-used after proper washing. The damaged and unusable canes and bottles should be sent for recycling.
- ☞ Production of FYM/ Compost/ Vermicompost at the farmers' level as well as the FPO level should be incorporated in the business plan.

7. Project interventions not complying with the policies/regulations

Project interventions with severe environmental impacts and those not complying with the policies/regulations of state government, Government of India and World Bank's safe guard policies should not be promoted under HPHDP. A list of these activities is as under:

a. Extraction of ground water in any form from notified areas- Poanta & Nahan Civil Sub-divisions of Sirmaour Distt.; Nalagarh & Solan Civil Sub-divisions of Solan Distt.; Una & Amb Civil Sub-divisions of Distt. Una; Nurpur & Jawali Civil Sub-division of Distt. Kangra, as per Himachal Pradesh Ground Water (Regulation & Control of Development and Management) Act 2005, without taking required permission from the Executive Engineers of Irrigation & Public Health Department will not be supported.

b. Purchase, stock, sale, distribution or exhibition of the following pesticides will not be supported:
   - Pesticides classified in Class *Ia, Ib* and *II* of *WHO* classification;
   - Pesticides not allowed for use by the Government of India;
   - Pesticides banned by the State Government.
   - Purchase, stock, sale, distribution or exhibition of pesticides and chemical fertilizers will not be supported without the requisite licenses.

c. No activity will be carried out in Critical or Endangered Natural Habitats.

d. Construction of roads, buildings, check dams, embankments, etc., will not be supported without prior approval of the design by a qualified Engineer.

e. Embankment / check dam exceeding 10 meters in height will not be supported.

f. Activities involving direct/untreated discharge into any water body any industrial waste, sewerage or other polluting substance will not be supported.

g. Any industrial activity without effluent treatment plant will not be supported without requisite permission from H.P. State Pollution Control Board.

8. PESTICIDE STORAGE, HANDLING AND DISPOSAL

Exposure to pesticides may occur when handling the pesticides product during opening of the package, mixing and preparation of the spray and while spraying the pesticides.

General Precautions when disposing the pesticides solution and containers:

- ☞ The operator should also wear a protective hat and face shield or goggles.
- ☞ Do not eat, drink or smoke while working.
- ☞ Wash hands and face with soap and water after spraying and before eating, smoking or drinking.
- ☞ Take bath at the end of every day's work and wear new clean clothes.
- ☞ Wash overalls and other protective clothing at the end of every working day in soap and water and keep them separate from the rest of the family's clothes.
- ☞ If the insecticide touches the skin, wash off immediately with soap and water.
- ☞ Change clothes immediately if they become contaminated with pesticides. Inform the supervisor immediately if one feels unwell.

Protective Clothing and Equipment

Absorption of pesticides occurs mainly through the skin, lungs and mouth. Use specific protective clothing and equipments (given as under) in accordance with the safety instructions on the product label.

i. Broad-rimmed hat (protects head, face and neck from spray droplets).
ii. Face-shield or goggles (protects face and eyes against spray fall-out).
iii. Face mask (protects nose and mouth from airborne particles).
iv. Long-sleeved overalls (worn outside of boots).
v. Rubber gloves and Boots

Storage

1. Pesticides storehouses must be located away from areas where people or animals are housed and away from water sources, wells, and canals.

2. They should be located on high ground and fenced, with access only for authorized persons. However, there should be easy access for pesticides delivery vehicles and, ideally access on at least three sides of the building for fire-fighting vehicles and equipment in case of emergency.

3. Pesticides must not be kept where these would be exposed to sunlight, water, or moisture which could affect their stability.

4. Storehouses should be secure and well ventilated.

5. Containers, bags or boxes should be well stacked to avoid possibility of spillage. The principle of first expiry first out should be followed.

6. Stock and issue registers should be kept up to date. Access to the pesticides should be limited to authorized personnel only.

7. The store room should have a prominently displayed mark of caution used for poisonous or hazardous substances. It should be kept locked.

8. Containers should be arranged to minimize handling and thus avoid mechanical damage which could give rise to leaks. Containers and cartons should be stacked safely, with the height of stacks limited to ensure stability.

Transportation

1. Pesticides should be transported in well-sealed and labeled containers, boxes or bags.

2. Pesticides should be transported separately. It should not be transported in the same vehicle as items such as agricultural produce, food, clothing, drugs, toys, and cosmetics that could become hazardous if contaminated.

3. Pesticides containers should be loaded in such a way that they will not be damaged during transport, their labels will not be rubbed off and they will not shift and fall off the transport vehicle onto rough road surfaces.

4. Vehicles transporting pesticides should carry prominently displayed warning notices.

5. The pesticides load should be checked at intervals during transportation, and any leaks, spills, or other contamination should be cleaned up immediately using accepted standard procedures.

Disposal of remains of pesticides and empty packaging

1. At the end of the day's work, the inside of the spray pump should be washed and any residual pesticides should be flushed from the lance and nozzle.
2. The rinsing water should be collected and carefully contained in clearly marked drums with a tightly fitted lid. This should be used to dilute the next day's tank loads or disposed properly by the supervisor at disposal sites like pits or digs.
3. Never pour the remaining pesticides into rivers, pools or drinking-water sources.
4. Decontaminate containers where possible. For glass, plastic or metal containers this can be achieved by triple rinsing, i.e. part-filling the empty container with water three times and emptying into a bucket or sprayer for the next application.
5. All empty packaging should be returned to the supervisor for safe disposal according to national guidelines.
6. Never re-use empty insecticide containers.
7. It shall be the duty of manufacturers, formulators of pesticides and operators to dispose packages or surplus materials and washing in a safe manner so as to prevent environmental or water pollution.
8. The used packages shall not be left outside to prevent their re-use.
9. The packages shall be broken and buried away from habitation.

Disposal of Expired Pesticides

1. Adequate measures should be undertaken to avoid expiry of stocks in storehouses.
2. *"First Expiry- First Out"* principle should be strictly followed during stock movements.
3. The expired stock should be returned to manufacturer for disposal as per guidelines preferably through incineration process.
4. The chemical efficacy should be tested before disposal of expired pesticides to find out possibility of usage. The efficacy and active ingredient percentage of pesticides is tested and certified by the authorized testing laboratory.

Health Monitoring

In case of accidental exposures or appearances of symptoms of poisoning, medical advice must be sought immediately.

9. Post-entry quarantine Requirements

In accordance with provisions of Chapter IV of Plant Quarantine (Regulation of Import into India) Order, 2003, the importer shall be required to establish the post-entry quarantine facilities such as an isolated field/nursery/glass house/screen house/ poly house etc., that are duly certified by the Inspection Authorities (IAs) notified

in Schedule-XI Part-I and Part-II in accordance with prescribed guidelines. The importer shall apply in *PQ Form-18* for certification of approval of post-entry quarantine facility to the Inspection Authority and the certificate for approval of post-entry quarantine facility shall be issued in *PQ Form-19* by the Inspection Authority.

A. Requirements of open field Quarantine facility:

1. The farm/ nursery site shall be fenced all round up to a height of 1.25 m with a single entry point with a lockable gate. It shall be isolated from similar cropped by a distance of 500 to 1000 m.
2. The field is bordered around with a high density polythene film up to height of 10 feet without any openings or gaps and/or raised around with 3-4 rows of densely populated crops such as *Dhaincha* & *Sesbania* to serve as insect barrier.
3. A suitable signboard must be displayed at the gate indicating restricted area & entry to the area require the approval of the owner of PEQ facility.
4. The field is located in an elevated area and properly levelled with adequate drainage conditions.
5. The water used for irrigating the field is of good quality and appropriately treated to render it pest free.
6. The field is watered through a drip irrigation system and or furrow or basin or bed irrigated and no overhead irrigation (sprinkler) system used.
7. The farm/nursery shall have the facilities for soil pasteurization or solarization or fumigation, incineration, spraying & watering facilities.
8. The field free from weeds and refuse of previous crop, if any.
9. Standard operating procedure in place for the operation of the facility (including record keeping, pest monitoring & sanitation practices.
10. Staff training and competency.

B. Requirements of closed quarantine facility (glass/screen/poly house)

1. The glass/screen/poly house facility shall have double door entry with entrance porch with inner door fitted with automatic spring door closure and outer sliding door provided with external lock.
2. Vector proof facility
3. Entrance foot-path/hand wash basin with disinfectant.
4. All the gaps from external to internal environment are properly sealed.
5. Appropriate temperature, light, humidity controls exist at the facility.

6. Proper misting facilities for tissue culture hardening/acclimatization of transplants.
7. Facility (and all containers) disinfected and free of plants, debris or soil.
8. Soil less medium used and pest free and/ or treated soil is used.
9. Separate facility for potting.
10. Water used is of good quality and appropriately treated to render pest free.
11. Sliding and raised benches for growing tissue culture plants.
12. Soil floors are covered with protective membrane.
13. Security is sufficient to prevent unauthorised access.
14. Standard operating procedures are in place for the operation of the facility (including record keeping, pest monitoring & sanitation practices.
15. Capacity building of staff.

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Annexure-I

List of agro-chemicals as per WHO Classification:

1. List of banned Pesticides:

Aldrin	Benzene Hexa Chloride (BHC)
Calcium Cyanide	Chlordane
Copper acetoarbenite	Dibromocworopropane (DBCP)
Endrin	Ethyl Mercury Chloride
Ethyl parathion	Heptachlor
Manzona	Methomyl 24% Formulation
Nicotine Sulphate	Nitrofen
Paraquate dimethyl sulphate	Penta Choloro nitrobenzene
Penta cholorophenol (PCP)	Phenyl Mercury Acetate (PMA)
Sodium Methane Arsonate (MSMA)	Tetradifon
Toxaphene	Phosohamidon 85% SL
Methomyl 12.5% L	Aldicarb
Chlorbenzilate	Deildrin
Ethyl dibromide (EDB)	Maleic Hydrazide
Trichloro Acetic Acid (TCA)	Aluminium phosphamide
Carbofuran 505 WP	Captafal 80%
Malathian 25 DP & 50% EC	Methoxy ethyl mercury chloride (MECE)

2. Extremely hazardous (Class Ia) technical grade active ingredients of pesticides (common name) not permissible in the project:

Aldicarb	Difethialone	Parathion-methyl
Brodifacoum	Diphacinone	Phenyl mercury acetate
Bromadiolone	Disulfoton	Phorate
Bromethalin	Ethoprophos	Phosphamidon
Calcium cyanide	Flocoumafen	Sodium fluroacetate
Captafol	Fonofos	Sulfotep
Chlorethoxyfos	Hexzchlorobenzene	Tebupirimfos
Chlormephos	Mercuric chloride	Terbufos
Chlorophacinone	Mevinphos	
Difenacoum	Parathion	

3. Highly hazardous (Class Ib) technical grade active ingredients of pesticides (common name) not permissible in the project:

Acrolein	*Ethiofencarb*	Omethoate
Allyl alcohol	Famphur	Oxamyl
Azinphos-ethyl	*Fenamiphos*	Oxydemeton-methyl
Azinphos-methyl	Flucuthrinate	Paris green (C)
Blasticidin-S	Fluoroacetamide	Pentachlorophenol
Butocarboxim	Formetanate	*Pindone*

Butoxycarboxim	Furathiocarb	Pirimiphos-ethyl
Cadusafos	Heptenophos	Propaphos
Calcium arsenate	Isazofos	Propetamphos
Carbofuran	Isofenphos	Sodium arsenite
Chlorfenvinphos	Isoxathion	Sodium cyanide
3-Chloro-1, 2-prppanediol	Lead arsenate	Strychnine
Coumaphos	Mecarbam	Tefluthrin
Coumatetralyl	Mercuric oxide	Thallium sulphate
Zeta-cypermethrin	Methamidophos	Thiofanox
Demeton-S-methyl	Methidathion	Thiometon
Dichlorvos	*Methiocarb*	Triazophos
Dicrotophos	Methomyl	Vamidothion
Dinoterb	Monocrotophos	Warfarin
Edifenphos	Nicotine	Zinc phosphide

4. Moderately hazardous (Class II) technical grade active ingredients of pesticides (common name) not permissible in the project:

Alanycarb	Endosulfan	Paraquat
Anilofos	Endothal-sodium	Pebulate
Azaconazole	Esfenvalerate	Permethrin
Azocyclotin	Ethion	Phenthoate
Bendiocarb	Etrimfos	Phosalone
Benfuracarb	Fenazaquin	Phosmet
Bensulide	Fenitrithion	phoxim
Bifenthrin	Fenobucarb	Piperophos
Bilanafos	Fenpropidin	Pirimicarb
Bioallethrin	Fepropathrin	Prallethrin
Bromoxynil	Fenthion	Profenofos
Bromuconazole	Fenthin acetate	Propiconazole
Bronopol	Fentin hydroxide	Propoxur
Butamifos	Fenvalerate	Prosulfocarb
Butylamine	Fipronil	Prothiofos
Carbaryl	Fluxofenim	Pyraclofos
Carbosulfan	Formothion	Pyrazophos
Cartap	*Fuberidazole*	Pyrethrins
Chloralose	Gamma-HCH	Pyroquilon
Chlordane	Guazatine	Quinalphos
Chlorfenapyr	Haloxyfop	Quizalofop-p-tefuryl
Chlorphonium chloride	Heptachlor	Rotenone
Chlorpyrifos	Imazalil	Sodium fluoride
Clomazone	Imidacloprid	Sodium hexafluorosilicate
Copper sulphate	Iminoctadine	Spiroxamine
Cuprous oxide	Ioxynil	Sulprofos
Cyanazine	Ioxynil octanoate	Terbumeton
Cyanophos	Isoprocarb	Tetraconazole
Cyflutrin	Lambda-cyhalothrin	Thiacloprid

Beta-cyfluthrin
Cyhalothrin
Cypermethrin
Alpha-cypermethrin
Cyphenothrin
Deltamethrin
Diazinon
Difenzoquat
Dimethoate
Dinobuton
Diquat
Mercurous chloride
Metaldehyde
Metam-sodium
Methacrifos
Methasulfocarb
Methyl isothiocyanate
Metolcarb
Metribuzin
Molinate
Nabam
Naled
Thiobencarb
Thiocyclam
Thiodicarb
Trizamate
Trichlorfon
Tricyclazole
Tridemorph
Vernolate
Xylylcarb

5. Slightly hazardous (Class III) technical grade ingredients of pesticides (common name) permissible under IPM:

Acephate
Acetochlor
Acifluorfen
Alachlor
Allethrin
Ametryn
Amitraz
Azamethiphos
Bensultap
Bentazone
Bromofenoxim
Butroxydim
Chinomethionat
Chlormequat (chloride)
Chloroacetic acid
Chlorthiamid
Copper hydroxide
Copper oxychloride
Cycloate
Mefluidide
Cyproconazole
Metamitron
Dicamba
Metolachlor
Dichlorophen
Nitrapyrin
Dienochlor
N-octylbicycloheptene
Dimepiperate
Paclobutrazol
Demethipin
Pirimiphos-methyl
Dinocap
Fluchloralin
Flufenacet
Fluoroglycofen
Flurprimidol
Flusilazole
Flutriafol
Fomesafen
Furalaxyl
Glufosinate
Hexzzinone
Hydramethylnon
Ipropenfos
Isoprothiolane
Isoproturon
Isouron
Malathion
MCPA-thioethyl
Mecoprop
Mecoprop-P
Cymoxanil
Metalaxyl
Desmetryn
Mthylarsonic acid
Dichlorobenzene
2-Napthyloxyzcetic acid
Diclofop
Octhilinone
Difenoconazole
Oxadixyl
Demethametryn
pimaricin
Diniconazole
Propachlor
Resmethrin
Sethoxydim
Simetryn
Sodium Chlorate
Sulfluramid
Tebuconazole
Tebufenpyrad
Tebuthiuron
Thiram
Tralkoxydim
Triadimefon
Triadimenol
Tri-allate
Triclopyr
Triflumizole
Undecan-2-one
Uniconazole
Ziram
Cyhexatin
Mepiquat
Dazomet
Metconazole
Dichlormid
Myclobutanil
Dichlorprop
Nuarimol
Diethyltoluamide
dicarboximide
Demethachlor
Pendimethalin
Dimethylarsinic acid
Prochloraz
Diphenamid

Propanil	Dithianon	Propargite
Dodine	Pyrazoxyfen	Empenthrin
Pydridaben	Esprocarb	Pyridaphenthion
Etridiazole	Pyridate	Fenothiocarb
Pyrifenox	Ferimzone	Quinoclamine
Fluazifop-p-butyl	Quizalofop	

6. Technical grade active ingredients of pesticides unlikely to present acute hazard in normal use (common name) permissible in the project:

Aclonifen	Acrinathrin	Alloxydim
Amitrole	Ammonium sulfamate	Ancymidol
Anthraquinone	Asulam	Atrazine
Azimsulfuron	Azoxystrobine	Benelaxyl
Benazolin	Benfluralin	Benfuresate
Benomyl	Benoxacor	Bensulfuron-methyl
Bifenox	Bioresmethrin	Biphenyl
Bispyribac	Bitertanol	Borax
Bromacil	Bromobutide	Bromopropylate
Bupirimate	Buprofezin	Butachlor
Butralin	Butylate	Captan
Carbendazin	Carbetamide	Chlomethoxyfen
Chloramben	Chloransulam methyl	Chlorbromuron
Chlorfluszuron	Chloridazon	Chlorimuron
Chlorothalonil	Chlorotoluron	Chlorpropham
Chlorpyrifos methyl	Chlorsulfuron	Chlorthal-demethyl
Chlozolinate	Cinmethylin	Cinosulfuron
Clofentezine	Clomeprop	Clopyralid
Cloxyfonac	Cryolite [C]	Cycloprothrin
Cyclosulfamuron	Cycloxydi	Cyhalofop
Cyromazine	Diamuron	Dalapon
Daminozide	Desmedipham	Diafenthiuron
Dichlobenil	Dichlofluanid	Diclomezine
Dicloran	Diclosulam	Diethofencarb
Diflibenzuron	Diflufenican	Dikegulac
Dimefuron	Dimethirimol	Dimethomorph
Dimethyl phthalate	Dinitramine	Dipropyl isocinchomerate
Dithiopyr	Diuron	Dodemorph
Ethalfluralin	Ethephon	Ethirimol
Ethofumesate	Etofenprox	Famoxadone
Fanarimol	Fenbutatin oxide	Fenchlorazole
Fenclorim	Fenfuram	Fenhexamid
Fenoxycarb	Fenpiclonil	Fenpropimorph
Fenuron	Fenuron-TCA	Ferbam
Flamprop	Flucarbazone-sodium	Flucyclozuron
Flufenoxuron	Flumetralin	Flumetsulam
Fluometuron	Flupropanate	Flupyrsulfuron
Flurenol	Fluridone	Flurochloridone
Fluroxypyr	Fluthiacet	Flutolanil

tau-Fluvalinate
Fosetyl
Hexaconazole
Hydroprene
Imazapyr
Imazethapyr
Iprodione
Kasugamycin
Maleic hydrazide
Mefenacet
Metazachlor
Methoxychlor
Metobromuron
Metsulfuron methyl
1-Naphthylacetic acid
Neburon
Nitrothal-isopropyl
Oryzalin
Oxine-copper
Penconazole
Phenedipham
Phosphorus acid
Piperonyl butoxide
Probenazole
Prometon
Propaquizafop
Propineb
Pyrazosulfuron
Pyriproxyfen
Quinmerac
Quintozene
Simazine
Sulphur
Teflubenzuron
Terbuthylazine
Tetradifon
Thidiazuron
Tiocarbzil
Transfluthrin
Trietazine
Triflusulfuron-methyl
Validamycin
Flopet
Gibberellic acid
Hexaflumuron
Hymexazol
Imazapyr
Imibenconazole
Iprovalicarb
Lenacil
Manozeb
Mepanipyrim
Methabenzthiazuron
Methyldymron
Metosulam
Monolinuron
Napropamide
Niclosamide
Norflurazon
Oxabetrinil
Oxycarboxin
Pencycuron
Phenothrin
Phthalide
Pretilachlor
Procymidone
Prometryn
Propazin
Propyzamide
Pyrimethanil
Pyrithiobac sodium
Quinoxyfen
Rimsulfuron
Spinosad
Tebutam
Temephos
Terbutryn
Tetramethrin
Thifensulfuron-methyl
Tolclofos-methyl
Triasulfuron
Triflumuron
Triforine
Vinclozolin
Fosamine
Glyphosate
Hexythiazox
Imazamethabenzmethyl
Imazaquin
Inabenfide
Isoxaben
Linuron
Maneb
Mepronil
Methoprene
Metiram
Metoxuron
2-(1-Naphthyl) acetamide
Naptalam
Nicosulfuron
Ofurace
Oxdiazon
Oxyfluorfen
Pentanochlor
Phenylphenol
Picloram
Primisul furon
Prodiamine
Propamocarb
Propham
Pyrazolynate
Pyriminobac
Quinclorac
Pyrithiobac sodium
Siduron
Sulfometuron
Tecnazene
Terbacil
Tetrachlorvinphos
Thiabendazole
Thiophanate-methyl
Tolylfluanid
Tribenuron
Trifluralin
Triticonazole

Annexure: II

Central Insecticides Board (Established Under Section 4 of the Insecticides Act, 1968)

List of pesticides which are banned, refused registration and restricted in use:
(As on 20th October 2015)

I. PESTICIDES / FORMULATIONS BANNED IN INDIA

A.	**Pesticides Banned for manufacture, import and use**	
	1.	Aldicarb (vide S.O. 682 (E) dated 17th July 2001)
	2.	Aldrin
	3.	Benzene Hexachloride
	4.	Calcium Cyanide
	5.	Chlorbenzilate (vide S.O. 682 (E) dated 17th July 2001)
	6.	Chlordane
	7.	Chlorofenvinphos
	8.	Copper Acetoarsenite
	9.	Dibromochloropropane (DBCP) (vide S.O. 569 (E) dated 25th July 1989)
	10.	Dieldrin (vide S.O. 682 (E) dated 17th July 2001)
	11.	Endrin
	12.	Ethyl Mercury Chloride
	13.	Ethyl Parathion
	14.	Ethylene Dibromide (EDB) (vide S.O. 682 (E) dated 17th July 2001)
	15.	Heptachlor
	16.	Lindane (Gamma-HCH)
	17.	Maleic Hydrazide (vide S.O. 682 (E) dated 17th July 2001)
	18.	Menazon
	19.	Metoxuron
	20.	Nitrofen
	21.	Paraquat Dimethyl Sulphate
	22.	Pentachloro Nitrobenzene (PCNB) (vide S.O. 569 (E) dated 25th July 1989)
	23.	Pentachlorophenol
	24.	Phenyl Mercury Acetate
	25.	Sodium Methane Arsonate
	26.	Tetradifon
	27.	Toxaphene(Camphechlor) (vide S.O. 569 (E) dated 25th July 1989)
	28.	Trichloro acetic acid (TCA) (vide S.O. 682 (E) dated 17th July 2001)
B.	**Pesticide formulations banned for import, manufacture and use**	
	1.	Carbofuron 50% SP (vide S.O. 678 (E) dated 17th July 2001)
	2.	Methomyl 12.5% L
	3.	Methomyl 24% formulation
	4.	Phosphamidon 85% SL
C.	**Pesticide / Pesticide formulations banned for use but continued to manufacture for export**	
	1.	Captafol 80% Powder (vide S.O. 679 (E) dated 17th July 2001)
	2.	Nicotin Sulfate
D.	**Pesticides Withdrawn**	

	(Withdrawal may become inoperative as soon as required complete data as per the guidelines is generated and submitted by the Pesticides Industry to the Government and accepted by the Registration Committee. (S.O 915(E) dated 15th Jun,2006)	
	1.	Dalapon
	2.	Ferbam
	3.	Formothion
	4.	Nickel Chloride
	5.	Paradichlorobenzene (PDCB)
	6.	Simazine
	7.	Sirmate (S.O. 2485 (E) dated 24th September 2014)
	8.	Warfarin (vide S.O. 915 (E) dated 15th June 2006)

II. PESTICIDES REFUSED REGISTRATION

S.No.	Name of Pesticides
1.	2,4, 5-T
2.	Ammonium Sulphamate
3.	Azinphos Ethyl
4.	Azinphos Methyl
5.	Binapacryl
6.	Calcium Arsenate
7.	Carbophenothion
8.	Chinomethionate (Morestan)
9.	Dicrotophos
10.	EPN
11.	Fentin Acetate
12.	Fentin Hydroxide
13.	Lead Arsenate
14.	Leptophos (Phosvel)
15.	Mephosfolan
16.	Mevinphos (Phosdrin)
17.	Thiodemeton / Disulfoton
18.	Vamidothion

III. PESTICIDES RESTRICTED FOR USE IN THE COUNTRY

S.No.	Name of Pesticides	Details of Restrictions
1.	Aluminium Phosphide	The Pest Control Operations with Aluminium Phosphide may be undertaken only by Govt./Govt. undertakings / Govt. Organizations / pest control operators under the strict supervision of Govt. Experts or experts whose expertise is approved by the Plant Protection Advisor to Govt. of India except [1]Aluminium Phosphide 15 % 12 g tablet and [2]Aluminum Phosphide 6 % tablet.

		[RC decision circular F No. 14-11(2)-CIR-II (Vol. II) dated 21-09-1984 and G.S.R. 371(E) dated 20th may 1999]. [1]Decision of 282nd RC held on 02-11-2007 and, [2]Decision of 326th RC held on 15-02-2012. The production, marketing and use of Aluminium Phosphide tube packs with a capacity of 10 and 20 tablets of 3 g each of Aluminium Phosphide are banned completely. (S.O.677 (E) dated 17thJuly, 2001)
2.	Captafol	The use of Captafol as foliar spray is banned. Captafol shall be used only as seed dresser. (S.O.569 (E) dated 25thJuly, 1989) The manufacture of Captafol 80 % powder for dry seed treatment (DS) is banned for use in the country except manufacture for export. (S.O.679 (E) dated 17thJuly, 2001)
3.	Cypermethrin	Cypermethrin 3 % Smoke Generator, is to be used only through Pest Control Operators and not allowed to be used by the General Public. [Order of Hon,ble High Court of Delhi in WP(C) 10052 of 2009 dated 14-07-2009 and LPA-429/2009 dated 08-09-2009]
4.	Dazomet	The use of Dazomet is not permitted on Tea. (S.O.3006 (E) dated 31st Dec, 2008).
5.	Diazinon	Diazinon is banned for use in agriculture except for household use. (S.O.45 (E) dated 08th Jan, 2008).
6.	Dichloro Diphenyl Trichloroethane (DDT)	The use of DDT for the domestic Public Health Programme is restricted up to 10,000 Metric Tonnes per annum, except in case of any major outbreak of epidemic. M/s Hindustan Insecticides Ltd., the sole manufacturer of DDT in the country may manufacture DDT for export to other countries for use in vector control for public health purpose. The export of DDT to Parties and State non-Parties shall be strictly in accordance with the paragraph 2(b) article 3 of the Stockholm Convention on Persistent Organic Pollutants (POPs). (S.O.295 (E) dated 8th March, 2006). Use of DDT in Agriculture is withdrawn. In very special circumstances warranting the use of DDT for plant protection work, the state or central Govt. may purchase it directly from M/s Hindustan Insecticides Ltd. to be used under expert Governmental supervision. (S.O.378 (E) dated 26thMay, 1989).
7.	Fenitrothion	The use of Fenitrothion is banned in Agriculture except

		for locust control in scheduled desert area and public health. (S.O.706 (E) dated 03rdMay, 2007)
8.	Fenthion	The use of Fenthion is banned in Agriculture except for locust control, household and public health. (S.O.46 (E) dated 08th Jan, 2008)
9.	Methoxy Ethyl Mercuric Chloride (MEMC)	The use of MEMC is banned completely except for seed treatment of potato and sugarcane. (S.O.681 (E) dated 17thJuly, 2001)
10.	Methyl Bromide	Methyl Bromide may be used only by Govt./Govt. undertakings/Govt. Organizations / Pest control operators under the strict supervision of Govt. Experts or Experts whose expertise is approved by the Plant Protection Advisor to Govt. of India. [G.S.R.371 (E) dated 20thMay, 1999 and earlier RC decision].
11.	Methyl Parathion	Methyl Parathion 50 % EC and 2% DP formulations are banned for use on fruits and vegetables. (S.O.680 (E) dated 17thJuly, 2001) The use of Methyl Parathion is permitted only on those crops approved by the Registration Committee where honeybees are not acting as a pollinator. (S.O.658 (E) dated 04th Sep., 1992.)
12.	Monocrotophos	Monocrotophos is banned for use on vegetables. (S.O.1482 (E) dated 10thOct, 2005)
13.	Sodium Cyanide	The use of Sodium Cyanide shall be restricted for Fumigation of Cotton bales under expert supervision approved by the Plant Protection Advisor to Govt. of India. (S.O.569(E) dated 25thJuly, 1989)

Source: ***Central Insecticides Board (Established Under Section 4 of the Insecticides Act, 1968)***

Website: *http://cibrc.nic.in/*

For more details, please visit our website http://www.hds.hp.gov.in/

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