

NSPM-22

Guidelines for Assessment, Audit and Accreditation of Fumigation Agencies for Undertaking Aluminium Phosphide Fumigation



Government of India
Ministry of Agriculture & Farmers' Welfare
Department of Agriculture, Cooperation & Farmers' Welfare
Directorate of Plant Protection, Quarantine & Storage
N.H-IV, Faridabad-121001

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Endorsement

This standard entitled '*Guidelines for Assessment, Accreditation and Audit of Fumigation Agencies for undertaking Aluminium Phosphide fumigation*' prepared by the Directorate of Plant Protection, Quarantine & Storage, Faridabad-121001 is for rendering guidance in assessment, audit and accreditation of fumigation operators for undertaking effective fumigation operations as per provisions of the standard on '*Quarantine Treatments and Application Procedures: 2. Aluminium Phosphide fumigation*'. This standard has been revised in view of technological advancements and recent experiences. This standard replaces the *Guidelines for Assessment, Accreditation and Audit of Fumigation Agencies* developed by the Directorate of PPQ&S, N.H. 4, Faridabad in August, 2011.

This revised standard is duly approved for adoption and shall come into force from.....December, 2017.

(Dr. B. S. Phogat)
Plant Protection Adviser
Directorate of Plant Protection, Quarantine
& Storage, NH-4, Faridabad-121001
Date: December, 2017

Review & Amendment

This standard will be subject to periodic review and amendment as may be decided by the Plant Protection Adviser. This standard shall be updated and revised with the advancement of techniques and need of the hour, if necessary. The holders of this standard shall ensure that the current edition of this standard is being used.

Control & Distribution of the standard

The master copy of this standard shall be held by the Plant Protection Adviser, Dte of Plant Protection Quarantine & Storage, Faridabad. This standard will be hosted on Directorate's website <http://plantquarantineindia.nic.in> in pdf format for access to all the stakeholders. The standard can be freely reproducible for official use and any alterations and modifications to this standard shall be made only with the written approval of the Plant Protection Adviser. Any enquiries regarding this standard shall be made to the Additional Plant Protection Adviser (PP), PQ Division, Directorate of Plant Protection, Quarantine & Storage, Faridabad-121001.

INTRODUCTION

Scope

This standard sets out guidelines for assessment, audit and accreditation of fumigation agencies and Fumigation Operators for undertaking fumigation operations with Aluminium Phosphide as per the provisions contained in **Insecticides Act, 1968 and Insecticides Rules 1971**.

Background

Fumigation is an approved treatment method extensively used for eliminating pest population from agricultural products in many countries of the world. The Phytosanitary regulations of many countries require certain commodities to be fumigated prior to export and endorsed on the Phytosanitary certificate or the fumigation certificate issued by an approved fumigation agency to accompany with the consignment clearly detailing the treatment. Phosphine fumigant (Aluminium Phosphide) can be used to fumigate stacked materials by covering with a tarpaulin made from plastic sheeting which allows fumigant to be contained to the treated material only. The most important aspect of a successful fumigation with any fumigant is the degree to which the space is sealed. Aluminium Phosphide generates Phosphine gas when exposed to water molecules in atmosphere. The Phosphine is highly toxic to insects, human beings and other forms of animal life. In addition to its toxic properties, the gas may corrode certain metals and may ignite spontaneously in air at concentration greater than its lower flammable limit of 1.8% (V/V) (17900ppm).

References

DPPQS. 1997. Manual for Fumigation Operators, Directorate of Plant Protection, Quarantine & Storage, N.H-IV, Faridabad-121001 (India).

1. GENERAL REQUIREMENTS

1.1. Accreditation Authority:

The Directorate of Plant Protection, Quarantine & Storage, under the Ministry of Agriculture & Farmers' Welfare shall be the authority for granting accreditation to fumigation agencies for conducting fumigation treatments with Aluminium Phosphide (ALP) under Accreditation Scheme. The Plant Protection Adviser shall accredit the Fumigation Operators for undertaking Aluminium Phosphide fumigation for pre-shipment treatments and quarantine purposes including ware houses. The use of Aluminium Phosphide is restricted and it shall be used under the supervision of persons authorized by Plant Protection Adviser. The State Governments shall be responsible to issue license for sale/stock/use of Aluminium Phosphide fumigant only after necessary verification of certificate of approval granted to fumigation agency with accredited fumigation operator by the Plant Protection Adviser as per register of fumigation agencies maintained by the Directorate at its website: <http://plantquarantineindia.nic.in>.

The registered branch shall carry out fumigation operations **within the State in range of 100 KM** from branch headquarters.

1.2. Registration Protocols:

The Directorate of Plant Protection, Quarantine & Storage, N.H-IV, Faridabad-121001, will establish a central register of fumigation agencies with accredited fumigation operators as per the format prescribed in *Appendix-I*. In order to be registered with the Dte of PPQS, the fumigation agency must have accredited fumigation operator. The fumigation agency with accredited fumigation operator will be allotted a unique registration number and each accredited fumigation operator shall be assigned a unique accreditation number. The registered fumigation agency must record the registration / certificate number in all correspondences with the Dte of PPQS, N.H-IV, Faridabad-121001. The fumigation company or agency or organization seeking registration along with accredited fumigation operator shall **apply to the concerned NPQS/ RPQS** in the format prescribed in *Appendix-II* along with documents as specified in *Annexure -1 of Appendix-II* and basic registration fee of **Rs. 25,000/-** through a bank draft payable in favour of **Pay & Accounts Officer** and duly signed compliance agreement (*Appendix-III*).

The In-charge of NPQS/ RPQS will nominate two officers for assessment within 15 days from the receipt of application. The inspection team shall carry out detailed physical inspection/ audit/ assessment of the fumigation agency/ fumigation operator and furnish inspection report to the officer in-charge within two days from the date of inspection. The officer in-charge of NPQS/ RPQS will forward inspection report with his recommendations to the Plant Protection Adviser within 3 days. PPA will issue certificate of accreditation within 7 days from the receipt of inspection report. A list of accredited fumigation agency / operator shall be maintained by DPPQS at national level and updated from time to time.

The registration of fumigation agency shall be granted initially for a period of **two years** and thereafter revalidated every **two years**. Each Fumigation Operator shall be issued with an

Accreditation Certificate and unique accreditation number and card after successful assessment, which is valid for a period of **two years** initially and thereafter to be revalidated after every **two years**.

The Registered Fumigation Agency shall apply for renewal **at least 45 days** prior to expiry of registration in the same format as prescribed in *Appendix-II* along with original registration certificate, revalidation fee of **Rs. 15,000/-** to the respective National/Regional Plant Quarantine Station., detail of activities undertaken in the past one or two years as the case may be, in the format prescribed in (*Appendix-XIV*). Respective NPQS/RPQS will nominate two officers for renewal audit within 15 days from the receipt of application. The nominated assessment team will conduct renewal assessment as per procedures laid down in the standard **within 45 days**.

For accreditation of additional fumigation operator, the registered fumigation agency shall **apply to concerned NPQS/ RPQS** in the same application form as prescribed in *Appendix-II* with a basic fee of **Rs.5, 000/-** and such accreditation shall be granted after necessary assessment as per Section 2.2.

Note: The registration certificate granted by the Plant Protection Adviser is valid only as long as the accredited fumigation operator is working with that fumigation agency or company or organization. Dte of PPQS should be notified by the registered agency in writing of any changes in arrangements between registered fumigation company and the accredited fumigation operators or changes within the company. The accreditation granted to the fumigation operator shall be cancelled in the event of leaving the company

1.3 Transfer of agency from one place to another within a State or from one State to another State:

Agency is allowed to transfer the whole set up of the agency including staff from one place to another place within a State or from one State to other State with prior approval of Plant Protection Adviser. However, the Agency will have to submit necessary documentary proof of facilities at new place along with the application for approval. Facility at new premises / site will be verified by a team of officers nominated by the PPA before granting approval. The application of transfer should be accompanied with a fee of **Rs. 15,000/-**.

1.4 Transfer of accredited fumigation operator from one branch to another branch by the agency:

- (i) Transfer of fumigation operator from one branch to another branch of the agency is permitted with the prior approval of Plant Protection Adviser. The application should be accompanied with a fee of **Rupees 5,000/-** only.
- (ii) Further on transfer, the period of validity of fumigation operator shall be linked with the validity of branch at which he/she is transferred within the scope of \pm six months period otherwise; it will be unchanged unless fumigation operator leaves the agency to which he is attached.

- (iii) When any agency opens a new branch and transfers the fumigation operator from old branch, the agency will be assessed for the basic facilities at new place besides the fumigation operator and fee as applicable will be charged.

1.5 Renewal of approval of agency after expiry of validity period:

- i. If an agency fails to apply for renewal of its registration **45 days** before the date of expiry of the registration a penal fee of **Rs. 10,000/-** will be charged for revalidation of the registration of such agency for another 30 days from the date of expiry. If agency fails to apply within stipulated time, agency shall stand terminated.
- ii. When an agency applies for renewal of registration within stipulated time period, but due to the procedural delay, could not get renewal within time, the agency may continue operative work of fumigation till the receipt of renewed registration certificate.
- iii. Nominated team will conduct renewal audit within 30 days from issuance of nomination letter. For renewal of the branch with the fumigation operator, audit of past fumigation activities shall carry 50% weightage & 50% for technical competence of the Fumigation Operator. Applicants will be examined for their technical competence through written (45/100), practical (45/100) and oral (10/100) examinations. To qualify the test, Fumigation Operator must secure at least 75% marks in each of the said examination. If any candidate fails to qualify the test, he may re-apply. The details will be recorded in **Appendix-IX** and **Annexure-I** to Appendix-IX and submitted to PPA along with other requisite formats.
- iv. If infrastructure & manpower of branch do not justify past fumigation activities, the branch shall be put under suspension for falsification of records

1.6 Responsibilities:

i) Responsibilities of Fumigation Agency

The fumigation company should:

- hold a valid approval certificate granted by the Plant Protection Adviser and a license to purchase, stock and use restricted pesticides granted by the Director of Agriculture of the concerned State;
- perform fumigation operations always under the supervision of accredited fumigation operator;
- advise the client on stocking of consignment for carrying out effective treatment;
- advise the client about the time requirements for complete and successful treatment of consignment;
- seek from the client information regarding any specific conditions attached to the treatment of consignment;
- inform the client of any other factors that affect treatment of commodity such as impervious package or sorptive nature of commodity;
- ensure adopting correct fumigation practices and follow safety precautions, while undertaking treatment operations;

- maintain proper records on stock and use of fumigant;
- issue fumigation certificate after ensuring that fumigation has been carried out effectively;
- follow the guidelines stipulated in the standard and abide by instructions issued by the Plant Protection Adviser from time to time;
- ensure not to undertake fumigation in forbidden places unsafe to public and animal life or of forbidden commodities;
- submit the information to Dte. of PPQ&S timely;
- submit monthly report of various activities of agency including stock and use of restricted pesticides in the prescribed format (*Appendix-XIV*) through e-mail on alp-dppqs@gov.in & concerned NPQS/RPQS

ii) Responsibilities of Fumigation Operator

- Not to undertake fumigation in residential areas where animal/human life exists.
- Display warning signs and take adequate safety precautions during fumigation.
- Ensure safety of workers during fumigation operations.
- Undertake supervision of all fumigation operations.
- To monitor and detect gas leakage if any, and take appropriate measures to seal leakage, monitor gas concentration and aeration of fumigated commodities.
- To monitor / repair essential fumigation /safety equipments.
- To dispose off empty containers of fumigants in safe manner as per the Insecticides Act and Rules.
- To maintain appropriate record related to fumigation (*Appendix-XI* and Annexure-1 of Appendix-XI) including the photograph and videograph of complete practice of fumigation conducted in vessels.

1.7.Fumigation Certification:

All Aluminium Phosphide fumigation treatments should be undertaken by approved / registered fumigation companies under the supervision of accredited Fumigation Operator. Accredited Fumigation Operator, before issuing Fumigation Certificate, shall:

- monitor the fumigation treatment to ensure that correct dosage of fumigant is applied and appropriate concentration of fumigant is maintained to make it effective
- affix an official stamp on the fumigation certificate with a unique accreditation number assigned to him;
- record all the details of fumigation in prescribed format confirming that the fumigation was carried out in accordance with this Standard(*Appendix-XI* and *Annexure-1* of Appendix-XI).

2. SPECIFIC REQUIREMENTS

2.1. Eligibility of Fumigation Operator:

2.1.1. Educational Qualifications

The fumigation operators seeking accreditation with the Dte of PPQS shall possess the educational qualifications namely: B. Sc. Degree in Agriculture or **B.Sc. Degree with Chemistry** as one of the subject from any recognized University.

2.1.2. Training Requirements

The eligible operators shall be required to undergo training for a period of at least fifteen days at any of the training institute approved by the Plant Protection Adviser, Dte of PPQS and possess working knowledge of MS Word, MS Excel and internet on computer. The training programme shall be as per the guidelines prescribed by the Plant Protection Adviser and should be structured to impart technical skills and competency in performance of effective fumigation operations with Aluminum Phosphide. The training programme will cover especially the following areas viz.,

- Regulations/National Standards
- Role of Regulating Agencies & Responsibilities of Fumigation Operators
- General principles of fumigation
- Physicochemical properties /formulations of Aluminium Phosphide and their safe use.
- Correct fumigation practices with ALP (correct / recommended dosage of fumigant; proper fumigant distribution; required exposure period; correct concentration of gas within fumigation chamber; proper understanding of temperature, humidity relationships for effective fumigation)
- Detecting gas leakages / Measuring and monitoring gas concentration
- Use of safety equipment, first aid and safety precautions
- Factors contributing to success/failure of fumigation
- Ship fumigation, container / stack fumigation etc.

The training programme shall demonstration of good fumigation practices as well as group interactions on specific problems and issues related to fumigation operations. There shall be a pre and post training evaluation to assess adequacy of skills of fumigation operator.

2.2. Assessment Protocol:

At least a panel of **two technical experts approved by the In-charge NPQS/RPQS** shall undertake the assessment of fumigation agencies for accreditation/ renewal of registration. The technical experts must possess required skill competency in performance of effective fumigation operations with Aluminium Phosphide and fully acquainted with the provisions of the ALP Standard including requirements of the accreditation of fumigation agency. **The panel of experts after assessment shall submit a report to In-charge NPQS/RPQS**

in the format prescribed in *Appendix-IV* (along with *Annexures 1 & 2*) for consideration of registration/renewal of fumigation agency with accredited fumigation operator.

The TA/DA in respect of nominated Officers for assessment shall be borne by the DPPQ&S and no liability to this effect rest with the treatment providers.

2.2.1: Criteria for nomination of Audit team for assessment of fumigation agency:

Two technical experts possessing required skill competency in performance of effective fumigation operation shall be nominated by In-charge NPQS/RPQS.

2.2.2: Timelines for conducting of Audit:

Timeline of 45 days period from the date of issue of assessment/nomination letter shall be applied. However, in case of unavoidable circumstances justification of delayed audit is to be furnished by the audit team.

2.2.3. Assessment of fumigation operator

The fumigation operator seeking accreditation must have undergone the training on fumigation practice at the authorized institute and working knowledge of computer and internet prior to assessment. The fumigation operator shall be assessed by a panel of technical experts approved by the In-charge of NPQS/ RPQS, for knowledge and skill competency to perform effective fumigation treatment in line with this Aluminium Phosphide Standard of Dte of PPQS.

The fumigation operator shall be assessed for:

- sound knowledge of regulatory requirements, principles of fumigation and general practices;
- ability to carry out the tests needed to ensure that the treatment is successful;
- ability to recognize and analyze the factors leading to successful fumigation as well as a failed or potential to fail fumigation operations;
- ability to comprehend the label requirements and hazards associated with the use of Aluminium Phosphide;
- ability to demonstrate the use of safety equipments and possess knowledge of Aluminium Phosphide poisoning, first aid and emergency and safety measures.
- capability to measure fumigant concentration in enclosure with the help of monitor and Threshold Limit Value (TLV) in/around the chamber with the help of leak gas detector.

The operators will be examined for their technical competence through written, practical and oral examinations. To qualify the test, applicants must secure at least 75% marks in each of the said examination. If any candidate fails to qualify the test, he may appear for the said examination for 2nd time but not earlier than 3 months of 1st assessment.

2.2.4. Assessment of equipments & facilities

The fumigation agency shall be assessed for possessing essential equipments and accessories (*Appendix-V*) that are required for undertaking Aluminium Phosphide treatments and their working condition, availability of a separate secured place for stocking fumigant, proper upkeep and maintenance of safety equipments (gas masks / SCBA) and calibration of measuring equipments etc.

2.2.5. Assessment of organization & personnel

The fumigation company must have an organizational chart with clear job descriptions. At minimum level, it shall have a General Manager or equivalent, who shall have authority and resources to carry out assigned administrative jobs for up-keep of the office and a Technical Manager (fumigation operator), who shall be responsible for all fumigation technical activities.

The fumigation company must have sufficient number of technical personnel to carry out its activities. A minimum of two persons shall be required to carry out each fumigation activity including an accredited fumigation operator. The agency will arrange training to its personnel in carrying out Alp fumigation treatment.

Fumigation Company must have, computer, mass storage device, camera for photo and videography. Both, the management of fumigation agency and the accredited fumigation operator must be aware of all the regulatory requirements including the licensing requirements regarding use of fumigants and the operational requirements outlined in the Aluminium Phosphide standard of the Dte of PPQS. They must be aware of their responsibilities and the need to acquaint everyone associated with fumigation treatment procedure.

2.3. Issue of Certificate of Approval & Accreditation:

Each assessed fumigation agency with accredited fumigation operator shall be issued a certificate of approval in the prescribed format (*Appendix-VI*).

2.4. Audit Protocols:

Dte. of PPQS shall establish an audit system outlined below to measure the performance of Fumigation Company and the accredited fumigation operator against the requirements of the Aluminium Phosphide standard of the Dte of PPQS. The audit will be carried out by the specified officers of the Dte of PPQS as per the checklist in *Appendix-VIII* for Accreditation audit and in *Appendix-IX* (along with *Annexure-1* of Appendix-IX) for renewal audit. At the end of each audit, the auditor shall list out non-conformities under the following three categories:

- Critical non-conformity:** occurs when as a result of collection and analysis of objective evidence it is concluded that the fumigation agency has grossly violated the regulatory requirements and the requirements of the Aluminium Phosphide standard established by the Dte of PPQS and the Accreditation Scheme.

- **Major non-conformity:** A deviation or multiple deviations from the documented procedures that is confirmed through the collection of objective evidence that shows discrepancies or lapses in discipline relating directly to either the Standard and/or regulatory requirements and which may compromise the overall effectiveness of the Accreditation Scheme.

Note: - Two MAJOR non-conformities equal to one CRITICAL non-conformity

- **Minor non-conformity:** A deviation from the documented procedures that is confirmed through the collection of objective evidence that shows minor discrepancies or lapses in discipline relating to the Standard that do not compromise the overall effectiveness of the Accreditation Scheme.

Note: - Two MINOR non-conformities equal to one MAJOR non-conformity

The critical non-conformities will result in immediate suspension of the fumigation company and the accredited fumigation operator from the Accreditation Scheme. Major and minor non-conformities will result in corrective actions and an additional announced audit.

Dte of PPQS will notify the fumigation company and the accredited fumigation operator in writing within 7 working days of the non-conformity and advise the fumigation company and the accredited fumigation operator of subsequent compliance action to be taken by the said fumigation company. The fumigation company shall submit a corrective action report in the format prescribed in *Appendix-X* to the In-charge NPQS/ RPQS, with records and details non-conformities, corrective action and the proposed date for rectification.

Type of Audits:

2.4.1. Accreditation audit

An Accreditation audit of a company will take place for first time registration of company/agency along with fumigation operator assessed as being technically competent. Accreditation audit will be repeated until the fumigation company with accredited fumigation operator demonstrate technical competency in fulfilling the requirements of the standard and Accreditation Scheme for 1st registration. There after Accreditation audit shall be replaced by annual audits and random checks.

2.4.2. Un-announced audit / surprise check

The Plant Protection Adviser or the officers authorized by him may undertake an un-announced audit / surprise check of the agencies without any prior intimation to the fumigation agency and its accredited Fumigation Operators. The findings of such un-announced audit / surprise check shall be submitted to PPA in format as per *Appendix-XV*.

2.4.3. Re-instatement audit

The Plant Protection Adviser or the officers authorized by him will undertake re-instatement audits on convenient date mutually agreed by the fumigation agency and nominated team of DPPQS officers after suspension.

2.4.4. Submission of Audit Reports

The audit team will submit the outcome of the audit results in the prescribed format to the concerned NPQS/ RPQS in-charge, in the following order, all the pages serially numbered:

- **For Accreditation audit:**
 - Forwarding Letter
 - Appendix-IV: Assessment Report on inspection of premises of pest control agency / Fumigation Operator and Annexure 1 & 2 of Appendix-IV
 - Appendix-VIII: Onsite audit check of Fumigation Company and Accredited Fumigation Operator and Annexure- II along with photographs
 - Organization Chart
 - Competency test result along with test paper
 - 5 Photograph of Fumigation Operator
 - Specimen signature of Fumigation Operator
 - Appointment Letter and Medical Certificate of Fumigation Operator
 - Qualification and Training Certificate of Fumigation Operator
 - Calibration Certificate of Equipment
 - Evidence for ownership of company premises
 - Relevant Bills
 - AIP Stock Register & Attendance Register
 - Appendix-X: Corrective Action Report (if any)

- **For renewal / reinstatement Audit:**
 - Forwarding Letter
 - Appendix-IV: Assessment Report on inspection of premises of pest control agency / Fumigation Operator and Annexure 1 & 2 of Appendix-IV
 - Appendix-IX: Renewal Audit check of Fumigation Company and Accredited Fumigation Operator and Annexure- 1 of Appendix-IX along with photographs
 - Organization Chart
 - Competency test result along with test paper
 - 5 Photograph of Fumigation Operator
 - Specimen signature of Fumigation Operator
 - Medical Certificate of Fumigation Operator and Fumigation Assistants
 - Calibration Certificate of Equipment
 - State License (Form VI-C) along with Principal Certificate (Form VI-D)
 - Evidence for ownership of company premises
 - Relevant Bills
 - AIP Stock Register & Attendance Register
 - Appendix-X : Corrective Action Report (if any)

2.4.5. *Audit of Auditors*

The Plant Protection Adviser or Officers authorised by him shall undertake audit of auditors from each region by randomly selecting the auditors to evaluate the performance of audit. The audit will be based on verifying the audit reports with that of Fumigation Agency and the Fumigation Operator audited.

2.5. **Suspension and Reinstatement Protocol**

The Plant Protection Adviser shall immediately suspend for a period of three months the fumigation agency and accredited fumigation operator that perform ineffective fumigation operations which includes receipt of notification of noncompliance due to detection of live infestation from the consignment fumigated by the agency.

In case of other noncompliance, show-cause notice will be served as to why they should not be suspended and if satisfactory reply not received within 15 days the agency and operator will be suspended. Final decision will be subject to the outcome of investigation.

In the event of **suspension thrice** or more within **5 year period** the branch will be **black listed**. **Further provided that the Fumigation Operator will be suspended if two times in a year non-compliance is received in his jurisdiction.**

If during an audit, infrastructure & manpower of branch do not justify past fumigation activities or one or more critical non-conformities, two or more than two major non-conformities are found, fumigation company and its accredited fumigation operator will be suspended and will be subject to a reinstatement audit, if they want to continue the fumigation activities.

If during an audit, less than two major and less than four minor non-conformities are found the fumigation company and the accredited fumigation operator will be subject to an additional announced audit within six (6) weeks. If during the follow-up audit, it is observed that the said non-conformities have not been addressed, the fumigation agency and the accredited fumigation operator will be suspended immediately and will be subject to a reinstatement audit within six (6) weeks. Reinstatement audit will be repeated if required until the fumigation agency and the accredited fumigation operator demonstrate competency in fulfilling the requirements of the Aluminium Phosphide Standard.

The approval granted to the fumigation agency and the recognition granted to the fumigation operator will be cancelled, if:

- on a reinstatement audit, a critical or two major non-conformities have accrued or
- they are suspended on three separate occasions within a period of five years.
- the receipt of non-compliance notification from importing countries on the ground of detection of live pests will be treated as sufficient ground for immediate suspension of fumigation agency concerned.

Once an accreditation has been cancelled, before re-accreditation can take place, the accredited fumigation operators will be required to undertake additional accreditation training. Thereafter the fumigation company and the accredited fumigation operator will be required to complete assessment process.

2.6. Appeal and Revision Protocol:

If the fumigation company and the accredited fumigation operator believe that there were extenuating circumstances in respect to the occurrence of non-conformity, the fumigation agency and the accredited fumigation operator may appeal against the decision of PPA. Compliance action will remain in place, while the appeal is being considered.

For this purpose, the fumigation agency and the accredited fumigation operator shall apply a memorandum of appeal against the decision to the Joint Secretary, in-charge of Plant Protection Division, Department of Agriculture, Cooperation & Farmers' Welfare, Krishi Bhavan, New Delhi-110001, within seven working days of the communication of decision. The memorandum of appeal should clearly set out the grounds for appeal. Joint Secretary, in-charge of Plant Protection Division, shall acknowledge the receipt of the appeal within 5 working days and endeavour to make a decision on the appeal in writing within 30 working days of the receipt of all available facts relating to the matter.

Joint Secretary (Plant Protection) may call for all the records relating to the decision from the Plant Protection Adviser for the purpose of satisfying himself to the legality or propriety of any such decision passed by the PPA before any such order as deemed fit shall be passed. However, before any such order is passed, PPA shall be given a reasonable opportunity to be heard and no such order shall be passed after expiry of 30 working days.

2.7. Documents/Records of Fumigation:

The fumigation agency must ensure that the following records and documents relating to supervision, monitoring and testing of compliance with the procedures are maintained in prescribed format and kept up to date.

- Fumigation Record (Appendix-XI) and Annexure-1 to Appendix-XI: Check sheet for fumigation
- Stock and Issues Register for fumigant (ALP) (*Appendix-XIII*)
- Monthly report of various activities of agency including stock and use of Aluminium Phosphide in the prescribed format (Appendix-XIV)
- Calibration records
- Record of Servicing of Equipments & Replacement of Accessories
- Test Report of sheet permeability provided by the manufacturer
- Personal Health Records of Fumigation Operators & Co-workers
- Details of personnel trained in First Aid
- Record of Accredited Fumigation Operators
- Copy of Job order
- Fumigation Certificates (Appendix-XII)
- Equipment stock register
- Monthly Report - fumigation certificate wise (Appendix-XIV)

2.8 Reporting of Fumigation Activities:

The fumigation agency must report to the Plant Protection Adviser and respective NPQS / RPQSon monthly basis regarding the stock / use of Aluminium Phosphide fumigant and the details of all the fumigation operations carried out in the preceding month as per format in *Appendix-XIV*.

2.9 Schedule of Treatment with ALP:

The 'Recommended usage' of fumigant is given below. This includes commodities, pest organisms, dosage and permissible concentration in air, aeration/waiting period and maximum number of fumigation suggested. However, if there is specific stipulation by the importing country in respect of above parameters, the same is to be adopted.

Common Name: Aluminium Phosphide (ALP) generating Phosphine gas, (PH₃)

Composition : (a) Active ingredients: Aluminium Phosphide 56% w/w/ minimum.

(b) Other ingredients: Ammonium salts, wax, fillers and
adjuvant 44% w/w maximum

(c) A 3 gm tablet generates 1 gm PH₃ along with NH₃ and CO₂

2.10 Important consideration in Treatment:

- (i) Do not re-circulate, follow normal diffusion. Not recommended for vacuum fumigation.
- (ii) In order to generate PH₃ from tablets free moisture is required. Hence, too dry grain should not be fumigated with PH₃ tablets.
- (iii) Goods covered with or packaged in gas impervious materials (such as plastic wrapping or laminated plastic films, lacquered or painted surfaces, Aluminium foil, tarred or waxed paper) must have the coverings or packaging opened, cut or removed, prior to fumigation.

2.11 Constraints in use of Alp:

- Fumigation should not be attempted at Relative Humidity (RH) less than 50% (grain moisture contents around 10%)
- Some insect species are highly tolerant to PH₃ especially at low temperatures and short exposures.
- Oil bearing commodities tend to air slowly and have to be checked for residual PH₃.
- Odour threshold is 2 ppm; unfavorable on long exposure.
- Flammability hazard.
- Brass and copper are attacked.

2.12 Detectors for Alp:

- Paper strip detectors sensitive to 0.3 ppm.
- Detector tubes sensitive to 0.01 mg PH₃.

3. DOSES OF FUMIGANT (ALP) AND PRECAUTIONS TO BE TAKEN

3.1 Recommended Usage:

Fumigant	Conditions of use	Pest Name	Dosage			Permissible Concentration in air (ppm)	Aeration / waiting period (days)	Maximum number of repeated fumigation suggested
			Application	Weight/ Volume	Exposure period			
1	2	3	4	5	6	7	8	9
AIP	(i) Stored whole cereals and seed grains, millets, pulses, dry fruits & nuts, and spices	<i>Sitophilus oryzae</i> , <i>Tribolium castaneum</i> , <i>Rhizopertha dominica</i> , <i>Trogoderma granarium</i> , <i>Oryzaephilus surinamensis</i> , <i>Cadra cautella</i> , <i>Callosobruchus chinensis</i> , <i>Corcyra cephalonica</i>	Airtight (cover or godown)	3 tablets (3gms each per tonne of commodity)	Minimum 5 days (7 days for <i>S. oryzae</i> and 14 days for <i>T. granarium</i>)	Threshold Limit Value (TLV) of 0.3ppm or 0.004mg/ltr of air (0.4mg/m ³)	One hour of partial aeration in case of non-polyethylene packed commodities followed by 6-8 hours of full aeration. For Polyethylene packed commodities minimum aeration period is 48hours. The waiting period for the release of stocks is 48hours in both the cases. General recommender aeration for bag stock– 15 days	As and when required. Residue level not to exceed 0.05 ppm
AIP	(ii) Milled products: de-oiled cakes, rice, bran, flour, suji, meals & crushed grain (Animal & poultry food) split pulses (Dals) and other processed foods	<i>Tribolium castaneum</i> , <i>Oryzaephilus surinamensis</i> , <i>Corcyra cephalonica</i> , <i>Cadra cautella</i> , <i>Latheticus oryzae</i> , <i>Tyrophagus putrescentiae</i>	Airtight (cover or godowns)	3 tablets/ tonne or 225 gm/ 100m ³	5 days	Threshold Limit Value (TLV) of 0.3ppm or 0.004mg/litre of air (0.4mg/m ³)	Aeration as waiting period 7 days, to be checked with PH ₃ detector strips	As and when required. Residue level not to exceed 0.01 ppm
AIP	(iii) Empty godowns and sheds	All Insect Pests	Under Air-tight conditions	14 tablets/ 1000 cft. or 150gm /100 m ³	72 hours	Threshold Limit Value (TLV) of 0.3ppm or 0.004mg/litre of air (0.4mg/m ³)	Aeration period 24hours. Detector strips or Phosphine detector tubes should be use	As and when required.

							d in the premises to signal safety of atmosphere	
AIP	(iv) Burrows	<i>Mus platythrax</i> , <i>Mus booduga</i> , <i>Tatera indica</i> , <i>Mus musculus</i> , <i>Bandicota bengalensis</i> , <i>Rattus rattus</i>		1-2 pellets of 0.6 gm AIP/burrow	24 hours			As and when required.

3.2 Precautions for operators (including type of detectors/canister required to be used):

- Do not inhale Aluminium Phosphide dust and Phosphine gas.
- Do not open Alp containers with any sharp metallic device as contents may catch fire due to friction.
- Protective clothing like hand gloves and special respirator with reaction type canister must be worn during fumigation with aeration.
- Do not work alone in any fumigation work.
- Odour of the fumigant should not be relied upon as an indication of poisonous concentration of the fumigant.
- Phosphine detector strips or tubes be used before allowing workers entry into the fumigated premises.
- Smoking or eating at any time during fumigation should be strictly prohibited.
- Persons with punctured ear drums must not be employed for fumigation work.
- Although most formulations are designed to delay liberation of PH₃ from Aluminium Phosphide tablets, they liberate highly toxic Phosphine gas on opening the container. The gas is liberated on exposure to air. All fumigation work should, therefore, be planned so that operation of placing the tablets, covering with fumigation covers and closing doors and ventilators should be completed within shortest possible time but not more than 30 minutes.
- To ensure uniform and speedy placement / distribution of tablets, the points of application should be decided in advance.
- Warning notices must be pasted at the fumigation site to prevent exposure of employees/public to the gas.
- Phosphine reacts with metals especially with copper or copper containing equipments. So all copper containing equipment and parts in the godowns or other structures should be protected before the start of fumigation.
- Always open the containers in open air.
- Tins or tubes once opened which have to be stored for a short period must be sealed tightly and kept away from children and pets.
- In order to have proper distribution of PH₃ gas, 2/3rd of the Aluminium Phosphide tablets should be placed/distributed on the upper half of the stack.

3.3 Medical aid:

3.3.1 Symptoms of poisoning:

Phosphine is highly toxic to human beings. The gas is not absorbed through the skin. There is no evidence of cumulative effects from intermittent, low level exposure of 10 ppm or less. At higher concentration, inhalation of Phosphine may produce symptoms including nausea, vomiting, diarrhea, headache, chest pain and massive accumulation of fluids in the lungs before death.

3.3.2 Treatment :

The treatment is only symptomatic and supportive. If Phosphine has been inhaled, immediate hospitalization and observation for 72 hours for delayed onset of severe pulmonary edema is advisable.

Obtain chest X-ray, examine for infiltrates and perform analysis of arterial blood gases. Maintain PO₂ above 60 mg. Hg by instituting in stepwise fashion, the following measures are needed;

- Administration of 60 to 100 percent Oxygen by mask or cannula;
- Intubation and mechanical ventilation, and
- Positive and expiratory breathing. Fluid balance must be maintained; use of diuretic may be required. Steroids may be administered for two to four days to decrease the inflammatory response of the lung.
- Treat central nervous system effects symptomatically.

4. MAJOR STORED PRODUCT PESTS

Common Name	Scientific Name
Rice Weevil	<i>Sitophilus oryzae (L)</i>
Lesser grain borer	<i>Rhizopertha dominica (F)</i>
Khapra beetle	<i>Trogoderma granarium Everts.</i>
Red flour beetle	<i>Tribolium castaneum (Herbst)</i>
Saw-toothed grain beetle	<i>Oryzaephilus surinamensis(L)</i>
Cadelle beetle	<i>Tenebroides mauritanicus (L)</i>
Drugstore beetle	<i>Stegobium paniceum (L)</i>
Cigarette beetle	<i>Lasioderma serricorne (F)</i>
Pulse beetle	<i>Callosobruchus chinensis Fabr.</i>
Long-headed flour beetle	<i>Latheticus oryzae (Waterhouse)</i>
Cocoa Weevil	<i>Araecerus fasciculatus (De Geer)</i>
Dried-fruit beetle	<i>Carpophilus hemipterus (L)</i>
Red legged ham beetle	<i>Necrobia rufipes De Geer</i>
Flat grain beetle	<i>Cryptolestes pusillus Schönherr</i>
Carpet beetle	<i>Attagenus unicolor Brahm</i>
Rice moth	<i>Corcyra cephalonica (Staint.)</i>
Almond moth	<i>Cadra cautella (Walker)</i>
Mites	<i>Tyrophagus putrescentiae (Sch)</i>

5.MAJOR RODENT SPECIES

Common Name	Scientific Name
Lesser bandicoot rat	<i>Bandicota bengalensis</i>
Indian Desert Gerbil	<i>Meriones hurrianae</i>
The brown spiny mouse	<i>Mus platythirx</i>
House mouse	<i>Mus musculus</i>
Sewer rat	<i>Rattus norvegicus</i>
House rat	<i>Rattus rattus</i>
Soft furred field rat	<i>Rattus meltada</i>
Indian Gerbil	<i>Tatera indica</i>
Large bandicoot rat	<i>Bandicota indica</i>
Little field mouse	<i>Mus booduga</i>

APPENDIX –II

APPLICATION FOR REGISTRATION OF FUMIGATION AGENCY/ ORGANIZATION WITH ACCREDITED FUMIGATION OPERATOR					
Fumigation Company/Branch Name					
Address (including Tel/Mobile/ Fax/E-mail)					
General Manager /Branch Manager of the Fumigation Agency					
Head of Office particulars Name & Address					
Description of organizational structure of the company/ branch (Attach a copy of organizationchart)					
Area of Operation					
Brief accounts of the activities of the firm					
Details of technical personnel employed by the company/ branch					
Name	Date of Employment	Designation	Qualifications	Job Work	
Particulars of Fumigation Operators for whom the accreditation sought					
Name	Applicant's Father Name	Date of Employment	Qualifications (Degree/ University/ Subject)*	Accreditation training (Dates/ Place)*	Apprenticeship (Period /Name of Supervisor)
*Attach documentary proof in respect of qualifications/ training/ apprenticeship					
Whether the company/ branch has valid State licenses, if so particulars there of (Attach a copy of license)					Yes/No
Whether the company/ branch is applying for the registration for the first time under Accreditation Scheme?					Yes/No
Is the application for renewal of registration of fumigation company? If so give the particulars of Regd. Number/date of issue/valid up to (Attach original Registration Certificate)					Yes/No
Is the application for revalidation of accreditation of Fumigation Operator? If so, give the particulars of accreditation number/date of issue/valid up to (Attach original Accreditation Certificate)					Yes/No
Is the application for additional accreditation operator? If so furnish the list of accredited Fumigation Operators with the registered fumigation company/ branch (Attach list).					Yes/No
Whether the company/branch has all the essential equipments for undertaking fumigation as per the Standard? (Attach list of essential equipments procured by the					Yes/No

fumigation agency along with specifications /Number of units – <i>Annexure- I</i>)			
Is any separate, secured & ventilated storage facility for storing fumigants?		Yes/No	
Particulars of payment of registration/ renewal fee (Name of the Bank & branch/ DD No). (Attach bank draft)		Yes/No	
Whether compliance agreement enclosed?		Yes/No	
Name & Signature of Fumigation Operator applying for accreditation with Date			
Name & Signature of General Manager/ Branch Manager with Date & Seal			
For Official Use by Dte of PPQS			
Application Number:	Date of Receipt:	Acknowledgement Issued:	Initialed by/Date:
Date of Scrutinization:		Deficiencies Communicated:	Initialed by/Date:
Date of Assessment:	Assessed by	Assessment Report Received:	Initialed by/Date:
Registration Number:	Date of Issue/ Revalidation:	Registration certificate issued:	Initialed by/Date:
Accreditation Number:	Date of Issue/ Revalidation:	Accreditation certificate issued/ endorsed:	Initialed by/Date:
Acknowledgement Slip - Directorate of Plant Protection Quarantine & Storage			
Application Number:		Date of Receipt:	
Received from M/s:			
along with Bank Draft No		Dated:	
For Rs.		on	
		Signed by /Date	

Annex to Appendix-II

ANNEXURE-1: List of Equipment/Accessories

Sl.No.	Name of the Equipment/ Accessories	Make	Specifications including ISI, if any	No. of units available with firm	Date of purchase / procurement

APPENDIX-III

COMPLIANCE AGREEMENT	
1. From: (Name of Fumigation Company/ Branch)	2. To The Plant Protection Adviser Dte. of Plant Protection, Quarantine & Storage, NH-IV, Faridabad - 121001
3. Agreement related to: Registration of Fumigation Agency and accreditation of Fumigation Operator for undertaking Aluminium phosphide fumigation operations under Accreditation Scheme.	
4. Applicable Phytosanitary Regulatory Requirements To meet the regulation requirements of PQ order, 2003 issued under the Destructive Insects & Pests Act, 1914 & the regulations of the Insecticides Act, 1968.	
5. I/we agree to the following: <ol style="list-style-type: none">1. To take all possible precautions for the safety of workers engaged in fumigation operations with Aluminium Phosphide under close supervision of the recognized fumigation operator.2. To abide by the provisions of Clauses 10, 35 to 42, 44 of Insecticides Rules, 1971 issued under Insecticides Act, 1968, while undertaking fumigation and commercial pest control operations.3. Not to undertake any fumigation operations with Aluminium Phosphide in residential premises, cattle sheds and other public areas where animal/ human life is present.4. To follow all instructions and procedures, prescribed by the Plant Quarantine authorities in planning, set-up and conduct of fumigation.5. To inform Plant Protection Adviser any change of address of the firm or transfer, retirement, resignation and death of the recognized fumigation operators within two weeks from the date of effect.6. To provide all essential equipments for fumigation operation and maintain them in good working conditions.7. To extend all necessary assistance and cooperation to the officers of Dte. of PPQ&S during annual/ surprise audit check.8. To follow correct fumigation practices as specified in the standard.9. To keep and maintain up to date all records related to fumigation as specified in the standard and make these available for verification during audit check.10. To certify that applicant is not accredited with any other agency and if accredited, No Objection Certificate (NOC) from the earlier agency has been obtained and furnished.	
6. Name & Signature of Fumigation Operator with Date:	7. Name & Signature of General Manager/ Branch Manager with date:
8. Verified by: (Name & Signature of Authorized Officer)	9. Approved by: (Plant Protection Adviser)

APPENDIX-IV

ASSESSMENT REPORT FOR REGISTRATION OF FUMIGATION COMPANY WITH ACCREDITED FUMIGATION OPERATOR			
Name of Fumigation Company / Branch Assessed:			
Date (s) of Assessment			
Name of General Manager / Branch Manager:			
Name of Fumigation Operator Assessed:			
Details of Assessment of Fumigation Company/Branch			
1.	Organizational structure & Technical Resources for undertaking fumigation operations <input type="checkbox"/> Adequate <input type="checkbox"/> Inadequate		
	Comments:		
2.	Management Responsibilities/ Commitments to meet the requirements of ALP Standard (licenses/ documentation of fumigation practices/training of workers/health check-ups/safety requirements etc.) <input type="checkbox"/> Adequate <input type="checkbox"/> Inadequate		
	Comments:		
3.	Stocking of Essential Equipments & Accessories <input type="checkbox"/> Adequate <input type="checkbox"/> Inadequate		
	Comments:		
4.	Calibration and annual servicing of gas monitoring / Leak detectors / Relative humidity measurement & Maintenance of calibration and service records <input type="checkbox"/> Yes <input type="checkbox"/> No		
	Comments:		
5.	Maintenance of records of the following for a minimum of 2 years		
	Equipment purchase and calibration records <input type="checkbox"/> Yes <input type="checkbox"/> No	Stock purchase and usage records <input type="checkbox"/> Yes <input type="checkbox"/> No	Internal Training records <input type="checkbox"/> Yes <input type="checkbox"/> No
	Comments:		
6.	Separate storage facilities for fumigants <input type="checkbox"/> Safe and Secure <input type="checkbox"/> Poor Storage		
	Comments:		
7.	Operational Plan for servicing & maintenance of respiratory protection equipments (Gas Masks/ SCBAs) <input type="checkbox"/> Yes <input type="checkbox"/> No		
	Comments:		
Details of Assessment of Fumigation Operator			
8.	Knowledge about regulatory requirements, principles of fumigation and general practice <input type="checkbox"/> Adequate <input type="checkbox"/> Inadequate		
	Comments:		
9.	Awareness of Responsibilities of Fumigation Operator under the Accreditation Scheme <input type="checkbox"/> Adequate <input type="checkbox"/> Inadequate		
	Comments:		
10.	Awareness of fumigation of forbidden commodities or places <input type="checkbox"/> Adequate <input type="checkbox"/> Inadequate		
	Comments:		
11.	Knowledge about physicochemical properties and safety formulations of Aluminium phosphide fumigant <input type="checkbox"/> Adequate <input type="checkbox"/> Inadequate		
	Comments:		

12.	Knowledge of correct fumigation practices (Dosage/exposure period/ ALP application/ distribution/ RH relationships/ impervious packing materials) <input type="checkbox"/> Adequate <input type="checkbox"/> Inadequate
	Comments:
13.	Ability to select site for fumigation and make gas-tight enclosure in case of sheet fumigation <input type="checkbox"/> Yes <input type="checkbox"/> No
	Comments:
14.	Ability to measure monitor gas concentrations during fumigation and testing for gas leakages <input type="checkbox"/> Yes <input type="checkbox"/> No
	Comments:
15.	Ability to demonstrate use of protective equipments (gas masks/SCBAs), their fitness testing, cleaning & maintenance <input type="checkbox"/> Yes <input type="checkbox"/> No
	Comments:
16.	Ability to comprehend the label requirements and hazards associated with use of Aluminium phosphide (ALP) <input type="checkbox"/> Yes <input type="checkbox"/> No
	Comments:
17.	Knowledge about Aluminium phosphide poisoning, first-aid/safety measures <input type="checkbox"/> Adequate <input type="checkbox"/> Inadequate
	Comments:
18.	Additional Comments on past performance (where applicable)
19.	Recommendation regarding Registration Company with Accredited Fumigation Operator/Additional accreditations <input type="checkbox"/> Recommended <input type="checkbox"/> Not Recommended
20.	Reasons for not recommending
Name & Signature of Assessors with Date:	
1.	2.

ANNEXURES TO INSEPCTION TEAM ASSESSMENT REPORT (APPENDIX-IV)

Annexure-1: Particulars of technical expertise (educational qualifications/ training etc.) supported by appropriate documentary evidence.

Sl.No.	Particulars	(To be filled by Inspection Team)
1.	Name of Expert	
2.	Educational Qualifications	
3.	Institute from where basic training on fumigation acquired	
4.	Reference No. and Date of Approval of Expertise from DPPQS, if any	

Annexure-2: List of Equipments verified

Sl.No.	Name of the Equipment/ Accessories	Make	Specifications including ISI, if any	No. of units available with firm	Working condition as assessed by the Inspection Team including calibration as applicable

APPENDIX-V

LIST OF ESSENTIAL EQUIPMENTS

S.No.	Equipment	Specification including ISI, if any	Minimum No. of Units	Purpose
1	Fumigation Covers (Tarpaulin) (a) Low density polythene films or (b) Rubberized polythene sheets	As per ISI 4508 – 1963 As per ISI 4810 - 1968	2	To carry out fumigation operations under a temporary enclosure
2	Sand snakes	1 meter length, 15 cm. diameter must be filled only 65% - 75% with sand so that they lie flat on the floor	According to requirement	To make ground sealing of fumigation covers so as to make it air tight.
3	Hygrometer	As per ISI specification	1	For measuring relative humidity while undertaking fumigation with ALP.
4	Gas monitoring equipment	Capable of measuring phosphine gas concentration minimum 2000ppm	1	To monitor phosphine gas
5	Phosphine gas leak checker	Detection of PH ₃ for leak checking and for personal safety	1	To warn the operator of Phosphine presence and leak checking
6	Canisters for use with ALP or Universal	--	2	To protect against inhalation of fumigant.
7	Phosphine gas detection strips	Test strips impregnated with chemicals for detection of Phosphine gas	1 box	For checking TLV
8	Drager type multi – gas detector tubes	Consists of carrying case, spare parts set, screw driver gas pump. Draeger detector tubes Phosphine 25/A 8101621	1 unit, tubes in pkts	For checking TLV
9	Gas sampling tube/pipes	The sampling lines should be made up of crushproof nylon (2mm ID hydraulic hose is effective).	As required	To monitor phosphine gas
10	Gas mask (Full vision face mask)	As per IS:8523/1977 full vision face mask with corrugated tube, carrying strap	2	To protect against inhalation of toxic fumigant.
11	Portable oxygen cylinder with nose and mouth cap	--	1	Emergency supply of oxygen
12	Metal probe for introducing ALP tablets	12 ft. length	1	For introducing ALP tablets bulk fumigation storage bins / ship holds.
13	Tool box	--	1	To maintain / repair of equipment
14	Adhesive Tape (Plastic)	2” width	As required	For sealing
15	Dust Masks	--	2	To protect against inhalation of chemical dusts, aerosols etc.
16	First Aid Box	--	1	To render first aid measure

17	Goggles	--	As required	To protect eyes while applying fumigant.
18	Gloves	Rubberized/PVC	As required	To protect hands from hazardous chemicals
19	Resuscitator	--	1	To restore breathing in case of accidental exposure to fumigant.
20	Gum boots	--	As required	To protect feet from hazardous chemicals.
21	Fire Extinguisher	--	As required	To protect against fire hazards
22	Computer with mass storage device and internet	--	1	--
23	Digital Camera having facility of video and photography	--	1	To take video and photography
24	Calculator	Pocket type	1	To calculate volume and number of ALP tablets
25	Measuring tape	25m length, roll-in type	1	To measure volume enclosure
26	Plastic ropes	--	As required	To hold sheets in place
27	Danger strips/ Tape	--	As required	For demarcation of danger area

APPENDIX-VI

Certificate of Registration of Fumigation Agency									
 सत्यमेव जयते	Government of India Ministry of Agriculture & Farmers Welfare (Department of Agriculture, Cooperation & Farmers' Welfare) Directorate of Plant Protection, Quarantine & Storage N.H-IV, Faridabad-121001								
Registered Number	Date of Issue: Valid up to :								
<p><i>This is to certify that the following fumigation agency/ branch has been assessed and granted registration for undertaking Aluminium Phosphide fumigation treatments with an accredited Fumigation Operator in accordance with requirements specified in this Standard and under the provisions of Section 18 of the Insecticides Act, 1968 and subject to terms and conditions specified as under.</i></p> <p style="text-align: right;">() Plant Protection Adviser</p>									
Name of Fumigation Agency/ branch & Address									
Terms & Conditions: <ol style="list-style-type: none">1. The Registration Certificate shall be displayed in a prominent place open to public by the Fumigation Agency and the Registration Number shall be quoted in all correspondence with Directorate of Plant Protection, Quarantine & Storage and in the Fumigation Certificates being issued.2. The fumigation agency shall hold valid license for stock & use issued by the Director of Agriculture of the concerned State3. The certificate is valid for the period of two years as indicated above unless otherwise renewed by the competent authority. The fumigation agency shall apply for renewal at least 45 days prior to expiry of registration.4. The fumigation agency shall undertake all fumigation operations under direct supervision of accredited Fumigation Operator and abide by the conditions specified in Compliance Agreement.5. The certificate of registration granted shall be liable to be withdrawn/ cancelled, should the said firm involved in making false records or issue fraudulent certificates or failed to meet the requirements of the Aluminium phosphide Standard or violates any provisions of Insecticides Act, 1968 and Rules & Regulations issued there.6. This Certificate shall be valid for undertaking ALP fumigation operations within the State in range of 100 KM from branch headquarters.									
Endorsements: <table style="width: 100%;"><tr><td>Revalidated/ suspended/ cancelled on</td><td style="text-align: center;">by</td></tr><tr><td>Revalidated/ suspended/ cancelled on</td><td style="text-align: center;">by</td></tr><tr><td>Reinstated</td><td style="text-align: center;">on</td></tr><tr><td></td><td style="text-align: center;">by</td></tr></table>		Revalidated/ suspended/ cancelled on	by	Revalidated/ suspended/ cancelled on	by	Reinstated	on		by
Revalidated/ suspended/ cancelled on	by								
Revalidated/ suspended/ cancelled on	by								
Reinstated	on								
	by								
Copy to:									

APPENDIX-VII

Certificate of Accreditation of Fumigation Operator		
 सत्यमेव जयते	Government of India Ministry of Agriculture & Farmers Welfare (Department of Agriculture, Cooperation & Farmers' Welfare) Directorate of Plant Protection, Quarantine & Storage N.H-IV, Faridabad-121001	
Accreditation Number:	Date of Issue:	
	Valid up to :	
<i>This is to certify that the following Fumigation Operator employed with the following fumigation agency/branch has been assessed for technical competency for performance of fumigation treatments with Aluminium Phosphide and granted accreditation in accordance with requirements specified in this Standard and the provisions of Section 18 of the Insecticides Act, 1968 and subject to terms and conditions specified hereunder.</i>		
() Plant Protection Adviser		
Name of Fumigation Operator:		Affix Stamp size photo
Fumigation Company/ branch/Address:		
Terms & Conditions: <ol style="list-style-type: none">1. The Fumigation Operator shall always directly supervise the fumigation operations and shall be responsible for the safety of workers engaged in the fumigation operations.2. He must display the Accreditation card (see Annex) at the site of fumigation for ready recognition, whenever any fumigation treatment performed. .3. He shall be responsible for undertaking fumigation treatments in accordance with requirements specified in the Aluminium phosphide (ALP) Standard and Accreditation Scheme.4. He shall be responsible for issue of Fumigation Certificates after successful fumigation duly signed.5. The certificate of accreditation granted is valid for a period of two years unless otherwise renewed and is valid only for working with the specified company / branch unless endorsed by the competent authority6. The certificate of accreditation granted shall be liable to be withdrawn /cancelled, should the fumigation operator is involved in making false records or issue fraudulent certificates or failed to meet the requirements of the ALP Standard or violates any provisions of Insecticides Act, 1968 and Rules & Regulations issued thereunder.7. The certificate is not transferable and should be surrendered to .competent authority in the event of accredited Fumigation Operator retiring or leaving the afore said Company.8. This Certificate shall be valid for undertaking ALP fumigation operations within the State in range of 100 KM from branch headquarters.		
Endorsements:		
Revalidated/ suspended/ cancelled on		by
Revalidated/ suspended/ cancelled on		by
Reinstated	on	by
Copy to:		

Annex to Appendix-VII

Accreditation Card		
<p>Affix Stamp size Photo</p> <p>----- (Signature of FO) & Contact Number -----</p>	No.:	
	Date of Issue:	Valid Up to:
	Name of Fumigation Operator:	
	Father's Name of Fumigation Operator:	
	Fumigation Company / Address:	
	Issued by:	
	Plant Protection Adviser	

APPENDIX-VIII

Onsite Audit Check of Fumigation Company and Accredited Fumigation Operator for Accreditation audit			
Name of Fumigation Company/branch audited			
Name of the General/Branch Manager			
Name of Accredited Fumigation Operator (s)			
Date (s) of Audit			
Audited by			
Activity	Clause	Yes / No	Non-conformity
Does the fumigation company have adequate organizational Structure, Computer with internet, Camera for photography/ videography and staff resources to carry out fumigation?	2.2.5	Yes / No	Critical
Does the Fumigation Operator has the necessary qualifications & technical competency?	2.1	Yes / No	Critical
Does the fumigation company have all the essential equipment for carrying out fumigation operations as per the Standard?	2.2.4	Yes / No	Critical
Does the fumigation agency maintain records of relevant photographs and/or video graphs as required in the standard for the Aluminium phosphide fumigation treatment?	1.6	Yes / No	Critical
Does the fumigation company have proper record keeping system?	2.7	Yes / No	Minor
Is there any secured & well ventilated place for storage of fumigants?	2.2.4	Yes / No	Minor
Is the accredited Fumigation Operator able to demonstrate the knowledge of the Standard & Accreditation Scheme?	2.2.3	Yes / No	Major
Is the accredited Fumigation Operator directly supervising all the fumigation operations?	1.6	Yes / No	Major
Is the accredited Fumigation Operator undertaking all responsibilities for which he has been accredited?	1.6 (ii)	Yes / No	Major
Are the gas monitoring/ temperature measuring equipment/ humidity measuring equipment regularly calibrated to manufacturer specifications?	2.2.4	Yes / No	Major
Is the gas monitoring equipment being used during fumigation operations?	2.2.3	Yes / No	Minor
Are the equipment calibrations records maintained?	2.7	Yes / No	
Is the Relative Humidity (50% or above for best	2.2.3	Yes / No	Major

effective use) determined prior to the fumigation and recorded?			
Does the goods covered with or packaged in gas impervious materials (such as plastic wrapping or laminated plastic films, lacquered or painted surfaces, Aluminium foil, tarred or waxed paper) must have the coverings or packaging opened, cut or removed, prior to fumigation?.	2.10	Yes / No	Major
Does the fumigation sheets used meet the permeability requirements as specified in the Standard?	2.2.4	Yes / No	Major
Did accredited Fumigation Operator meet the sheet fumigation construction requirements of the Standard?	2.2.3	Yes / No	Major
Does the accredited Fumigation Operator monitor gas concentrations at specified times during the fumigation as per the Standard?	2.2.3	Yes / No	Major
Does the accredited Fumigation Operator check the fumigation enclosure for gas leakages with the help of leak detector after application of Aluminium Phosphide?	2.2.3	Yes / No	Major
Whether protective equipment such as respirators/SCBA being used during fumigation?	2.2.3	Yes / No	Major
Have the protective equipment been regularly serviced and maintained in working condition as per the documented plan of the fumigation company?	2.2.4	Yes / No	Major
Does the fumigation company undertake regular health check-up of Fumigation Operator & workers?	2.7	Yes / No	Minor
Is the enclosure aerated at the end of fumigation and tested gas-free before release?	2.2.3	Yes / No	Minor
Are the danger sign-boards displayed during fumigation?	1.6 (ii)	Yes / No	Minor
Does the accredited Fumigation Operator has the knowledge about emergency measures/ rescue operations in case of accidental poisoning by ALP fumigant?	2.2.3	Yes / No	Major
Name & Signature of Auditee with date (Authorized Signatory of Company)			
Name & Signature of Auditor (s) with date 1.		2.	

Annexure – 1 to Appendix-VIII

Brief Guidelines for Assessment of the Fumigation Operator as per NSPM-22

In respect of the NSPM-22 on the Alp fumigation, all the auditors for the assessment of the Pest Control Operator for accreditation under NSPM 22 for use of Aluminium phosphide should ensure that their assessment report must include the following:

1. Selection of site for fumigation.
2. Selection of commodity and its quantity fumigated.
3. Estimation of enclosure size (volume) to accommodate the commodity.
4. Determination of dose of ALP and its concentration suitable to the volume of enclosure or weight of the commodity.
5. Placing of ALP tablets in the enclosure.
6. Gas leakage checking.
7. Monitoring of gas concentration and verification of achievement of Threshold Limit Value (TLV).
8. Fumigation Demonstration Report.

The team should submit the Fumigation Demonstration Report in the attached format (**Appendix-IX**) besides the other requirements as per NSPM 22.

APPENDIX-IX

Onsite Audit Check of Fumigation Company and Accredited Fumigation Operator for Renewal Audit			
Name of Fumigation Company/branch audited			
Name of the General/Branch Manager			
Name of Accredited Fumigation Operator (s)			
Date (s) of Audit			
Audited by			
Activity	Clause	Yes / No	Non-conformity
Does the fumigation company have valid license/registration?	1.6 (i)	Yes / No	Critical
Does the fumigation company have adequate organizational Structure, Computer with internet, Camera for photography/ videography and staff resources to carry out fumigation?	2.2.5	Yes / No	Critical
Does the Fumigation Operator has the necessary qualifications & technical competency?	2.1	Yes / No	Critical
Does the fumigation company have all the essential equipment for carrying out fumigation operations as per the Standard?	2.2.4	Yes / No	Critical
Does the fumigation agency maintain records of relevant photographs and/or video graphs as required in the standard for the Aluminium phosphide fumigation treatment?	1.6	Yes / No	Critical
Does the fumigation company have proper record keeping system?	2.7	Yes / No	Minor
Is there any secured & well ventilated place for storage of fumigants?	2.2.4	Yes / No	Minor
Is the accredited Fumigation Operator able to demonstrate the knowledge of the Standard & Accreditation Scheme?	2.2.3	Yes / No	Major
Is the accredited Fumigation Operator directly supervising all the fumigation operations?	1.6	Yes / No	Major
Is the accredited Fumigation Operator undertaking all responsibilities for which he has been accredited?	1.6 (ii)	Yes / No	Major
Are the gas monitoring/ temperature measuring equipment/ humidity measuring equipment regularly calibrated to manufacturer specifications?	2.2.4	Yes / No	Major
Is the gas monitoring equipment being used during fumigation operations?	2.2.3	Yes / No	Minor
Are the equipment calibrations records maintained for 2 years?	2.7	Yes / No	
Is the Relative Humidity (50% or above for best effective use) determined prior to the fumigation through a verifiable source and recorded?	2.2.3	Yes / No	Major
Does the goods covered with or packaged in gas impervious materials (such as plastic wrapping or	2.10	Yes / No	Major

laminated plastic films, lacquered or painted surfaces, Aluminium foil, tarred or waxed paper) must have the coverings or packaging opened, cut or removed, prior to fumigation?.			
Does the fumigation sheets used meet the permeability requirements as specified in the Standard?	2.2.4	Yes / No	Major
Did accredited Fumigation Operator meet the sheet fumigation construction requirements of the Standard?	2.2.3	Yes / No	Major
Does the accredited Fumigation Operator monitor gas concentrations at specified times during the fumigation as per the Standard?	2.2.3	Yes / No	Major
Does the accredited Fumigation Operator check the fumigation enclosure for gas leakages with the help of leak detector after application of Aluminium Phosphide?	2.2.3	Yes / No	Major
Whether protective equipment such as respirators/SCBA being used during fumigation?	2.2.3	Yes / No	Major
Have the protective equipment been regularly serviced and maintained in working condition as per the documented plan of the fumigation company?	2.2.4	Yes / No	Major
Does the fumigation company undertake regular health check-up of Fumigation Operator & workers?	2.7	Yes / No	Minor
Is the enclosure aerated at the end of fumigation and tested gas-free before release?	2.2.3	Yes / No	Minor
Are the danger sign-boards displayed during fumigation?	1.6 (ii)	Yes / No	Minor
Does the accredited Fumigation Operator has the knowledge about emergency measures/ rescue operations in case of accidental poisoning by ALP fumigant?	2.2.3	Yes / No	Major
Does the fumigant purchase during the year match with the quantum of fumigation performed by the agency?	1.5	Yes / No	Critical
Does the canister purchase during the year match with the quantum of fumigation performed by the agency?	1.5	Yes / No	Critical
Does the maximum number of fumigation performed by agency in a day during the audit period match with the available Accredited Fumigation Operator and the instruments viz. gas monitor and leak-checker, the distance between one site to other site (give details thereof in Appendix-IX-aa).	1.5	Yes / No	Critical
Name & Signature of Auditee with date (Authorized Signatory of Company)			
Name & Signature of Auditor (s) with date			
1.			
2.			

Annex to APPENDIX-IX

**Annexure-1: Maximum number of fumigations performed in a day during audit period
(half yearly)**

S.No.	Date	Number of fumigation	Distance covered by FO in a day (KM)	No. of following items available on fumigation date				Remarks (does Agency has manpower & other physical infrastructure to perform such number of fumigation)
				Fumigation sheet	Gas monitor	Leak checker	Canisters used	

APPENDIX-XI

Fumigation Record							
Fumigation Company/ Branch					Regd. No.:		
					Date:		
Description of Goods fumigated							
Commodity	Quantity	No. of Packages	Mode of Packing	Shipping marks	Container Number (s)	Place of Fumigation	
Shipment Particulars							
Vessel Name	Port of loading	Country of Export	Foreign port of shipment	Name of Exporter		Name of Importer	
Details of Fumigation Treatment							
Fumigant	Dosage (g/m ³)/ (g/MT)	Date / Time of Starting Fumigation	Date / Time of Ending Fumigation	Average Temperature in °C	RH %	Quantity of fumigant	Volume / Type of Fumigation Enclosure
Record of Monitoring Gas Concentration				Gas Monitor type Used:			
			Readings of Sampling Lines				
Date	Time	Time Interval	S1	S2	S3	Monitored by	
		4 hours					
		24 hours					
		End of fumigation					
Ventilation process conducted:		Yes / No		TLV achieved:		Yes / No	
Name & Signature of accredited Fumigation Operator with date/Accreditation Number							

**Annex to Appendix-XI:
Annexure-1: Check Sheet of Fumigation**

Check sheet along with fumigation record to identify procedures and actions before, during and after each fumigation.

Item of Activity	Details of check	Status
Inspection of Fumigation site	Intact floor without cracks or drains	
	Floor not undulated, no pebbles or stones	
	Located in a safe working area	
	Well ventilated	
	Sheltered area, rain and wind protected as far as possible	
Preparation of Commodity	Stacked to allow good circulation leaving enough space	
	Impervious wrapping removed or slashed	
	Commodity not covered in impervious wrapping	
	Not forbidden commodity	
Preparation and	Relative Humidity (it should be above 50%)	
Installation of ALP tablets	Sheets of correct size & specification	
	Gas distribution line installed	
	Gas sampling tubes installed (minimum of 3 per enclosure)	
	Measure enclosure volume or weight of commodity and calculate dosage	
	Establish and mark out hazardous area and place dangerous signs	
	Cover the enclosure with sheet from top and place 2/3 rd of ALP tablets on upper half of the stack and place the remaining in the lower half of stack	
Gas leak checking	Ensure risk area and surrounds are free of unprotected personnel (up to 3m)	
	Test leak checker for working	
	Wear and test the respirator for correct fitness	
	Check for gas leakages around enclosure and correct leakages if any	
First & Second Readings	First Reading : After 4-6 hours - Measure gas levels on all monitor lines (Concentration – minimum 15% or 108ppm/M ³)	
	Second Reading: After 24 hours - Measure gas levels on all monitor lines (Concentration - minimum 80% or 576ppm/ M ³)	
	Record and document all readings	
End Point Monitoring (after 120 hrs)	Measure gas levels on all monitor lines (Concentration - minimum 30% or 216ppm/ M ³)	
	Record and document all readings	
De-gassing	Wear gas mask and test for fitness	
	Open enclosure and allow ventilation	
	Verify TLV (0.3ppm)	
	Remove warning signs and risk area demarcation	
	Retrieve ALP tablet remnant and dispose the same appropriately	
Documentation	Complete all documentation and release fumigated goods after ensuring gas-free	

APPENDIX-XII

Fumigation Certificate	
(Company Letter Head)	Treatment Certificate No:
(Dte. PPQ&S Regd. No. Date:)	Date of Issue
<p style="text-align: center;"><i>This is to certify that the goods described below were treated in accordance with the fumigation treatment requirements of importing country (_____) and declared that the consignment has been verified free of impervious surfaces/layers such as plastic wrapping or laminated plastic films, lacquered or painted surfaces, aluminium foil, tarred or waxed paper etc. that may adversely affect the penetration of the fumigant, prior to fumigation</i></p> <p style="text-align: center;"><i>The Certificate is valid for the consignments shipped within 21 days from the date of completion of fumigation</i></p>	
Details of Treatment	
Name of Fumigant	
Date of fumigation	
Place of fumigation	
Dosage of Fumigant	
Duration of Fumigation (in days)	
Average ambient humidity during fumigation (RH)	
Fumigation performed under gastight sheets	Yes / No
Description of Goods	
Container Number (or numerical link)./Seal Number	
Name & Address of Exporter	
Name & Address of Importer	
Type and description of cargo	
Quantity (MTs)/ No of packages/No of pieces	
Description of packaging material	
Shipping mark or brand	
Name & Signature of Accredited Fumigation Operator with seal & date/ Accreditation Number	

APPENDIX-XIII

STOCK/ ISSUE REGISTER FOR ALUMINIUM PHOSPHIDE (ALP) FUMIGANT

S.No.	Date of Entry	Opening Stock of fumigant	Quantity of fumigant purchased	Particulars of Invoice/ LR/ Bill No. & Dt/ Stock Transfer No. & Date	Total Stock of fumigant	Quantity of fumigant used / transferred	Closing balance	Signature of Authorised Signatory / Head of Office
1	2	3	4	5	6	7	8	9

APPENDIX-XIV

**Monthly Statement showing details of fumigation undertaken with
Aluminium phosphide (ALP)**

Name of Fumigation Company/Branch: (DPPQS Regd. No. _____ dated _____)			Month of Reporting:	
Opening stock (Kg)	Qty purchased (Kg)	Total Qty (Kg)	Qty used (Kg)	Closing Balance (Kg)

A. EXPORT: Particulars of fumigation carried out

S. N.	Certificate No. & Date	Commodity	Quantity	Country of Import	Dose of ALP applied	Total quantity of ALP used	Name of Fumigation Operator	Remarks

B. IMPORT: Particulars of fumigation carried out

S. N.	Certificate No. & Date	Commodity	Quantity	Country of Export	Dose of ALP applied	Total quantity of ALP used	Name of Fumigation Operator	Remarks

APPENDIX-XV

SURPRISE CHECK OF ACCREDITED FUMIGATION AGENCY

1.	Name and address of Fumigation agency inspected	
2.	Date & time of surprise inspection	
3.	Surprise check carried out by	
4.	Stock position of ALP on date with the firm (as physically verified)	
5.	Discrepancies, if any noted in the Maintenance of stock records (as revealed from checking of invoices & utilization of fumigants records)	
6.	Whether the firm possess valid Certificate of approval/ permission for use of ALP issued by the DPPQS. If so, the date of its expiry?	
7.	Whether technical expertise recognized by the Directorate is on pay roll of the Firm on date	
8.	Whether the fumigation/ safety Equipment possessed by the firm are in working condition	
9.	Whether the firm is submitting regular monthly activity report and returns on stock/use of ALP to DPPQ&S, if not give reason (should be supported by documentary evidences)	
10.	Whether the firm possesses separate place for storage of fumigants	
11.	Action taken by the firm on non-compliances /interceptions reported by importing countries during the last one year	
12.	Date of last surprise visit and discrepancies, if any noticed and action taken by the firm	
13.	Remarks and recommendations of officers	
	Name & Signature of Officers who carried out Surprise check with Date	

APPENDIX-XVI

**Checklist for the application of the accreditation of Fumigation Agency with
Fumigation Operator(s) for Aluminium phosphide Fumigation**

Sl.No.	Particulars
1.	Application in the prescribed format (Appendix-II) along with <ul style="list-style-type: none">• List of equipment / Accessories (Annexure-1)
2.	Application for recognition of Fumigation Operator (Appendix-II)
3.	Compliance Agreement (Appendix-III)
4.	Bank Draft of Rs.25,000/- (Rupees Twenty Five thousands only) payable in favour of Pay and Accounts Officer
5.	Organization Chart of the Agency / Branch
6.	Copy of B.Sc., (Ag.) or B.Sc. Degree with Chemistry as a subject
7.	Copy of Certificate completing at least 15 days training in Fumigation from CFTRI, Mysore or IGMRI, Hapur or NIPHM, Hyderabad.
8.	Copy of equipment's purchase bills / invoice
9.	Copy of Lease Deed Agreement/ ownership proof of the premises
10.	Whether the applicant is accredited with some other agency? If yes, then original certificate of accredited Fumigation Operator & NOC from the concerned agency may be furnished.

APPENDIX- XVII

**Table Showing Names of States under Jurisdiction of
NPQS / RPQS**

Sl.No.	NPQS / RPQS	Name of States	No. of States
1	National Plant Quarantine Station, New Delhi.	NCR, Delhi, Haryana, Uttar Pradesh, Rajasthan and Uttarakhand.	05
2	Regional Plant Quarantine Station, Amritsar (Punjab)	Punjab, Himachal Pradesh, Chandigarh and Jammu & Kashmir	04
3	Regional Plant Quarantine Station, Chennai (Tamil Nadu)	Tamil Nadu, Andhra Pradesh, Andaman & Nichobar, Kerala, Karnataka, Pondicherry & Telangana	07
4	Regional Plant Quarantine Station, Chennai, Kolkata (West Bengal)	West Bengal, Bihar, Orissa, Jharkhand, Assam, Meghalaya, Tripura, Manipur, Mizoram, Nagaland, Sikkim and Arunachal Pradesh.	12
5	Regional Plant Quarantine Station, Chennai, Mumbai (Maharashtra)	Maharashtra, Madhya Pradesh, Goa, Chhattisgarh, Laksh Dweep & Minicoy, Gujrat, Daman & Diu, Dadra & Nagar Haveli	08
		TOTAL	36