NSPM-18

Guidelines for Certification of Heat Treatment Facilities for Niger Seed for Export to USA

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

1.0. GENERAL REQUIREMENTS

1.1. Background

Niger (*Guizotia abyssinica*) seed from any foreign country shall be permitted import into USA subject to the phytosanitary requirements that the Niger seed at or before the time of arrival at the first port of entry shall be heat treated for possible infestation with noxious weeds or prohibited pathogens in accordance with the applicable provisions of USDA PPQ Treatment Manual. To establish a programme for treating Niger seed prior to importation to the USA, the following requirements must be met:

- Directorate of Plant Protection, Quarantine & Storage (NPPO) should request for certification of the facility by USDA;
- A mutually agreed work plan should be developed, which explains the responsibilities of all parties involved;
- Through regular audits, Dte of PPQS should monitor and ensure the effectiveness of the facility's quality system, as is documented in an approved quality assurance manual;
- Dte PPQS should conduct post-treatment sampling of random lots of Niger seed for export to USA. Contaminated weed seeds should be removed from the sample and tested for germination using tetrazolium and test results should be maintained for three years;
- Dte of PPQS should agree to certify that each lot has been treated according to US requirements by issuing phytosanitary certificate; and
- Adequate safeguards must be taken to prevent re-infestation of treated seed

In order to meet the standards or the requirements, the facility should be certified by USDA personnel from the Centre for Plant Health, Science & Technology (CPHST). Therefore this standard is developed in line with USDA, APHIS certification requirements to provide necessary guidance for approval of treatment facility.

1.2. Certifying Authority

The initial certification of facility will be co-conducted by the Centre for Plant Health Science and Technology (CPHST), USA and the Directorate of Plant Protection, Quarantine & Storage (Dte of PPQS). Subsequently the Dte of PPQS will be entrusted with responsibility for re-certification.

1.3. Approval of engineering plan of facility

The plans and specifications showing dimensions, capacity, heating units and temperature and time recording system should be as approved by the USDA, PPQ and CPHST. Besides these the treatment facilities constructed must meet the requirements of local regulating agencies. The equipments should be designed in a manner to hold the temperature at or above temperatures prescribed in the treatment schedule for the duration of time for the commodity. When the engineering plans approved the treatment plant will be constructed accordingly. Any modification of the original plans will require prior approval by USDA and Dte of PPQS.

1.4. Request for certification of a treatment facility

In order to conduct treatment plant certification test, the party intended to establish the treatment plant should submit a letter of request to Dte PPQS for forwarding it to the USDA-APHIS. The letter should include:

- An application (Appendix-I), giving particulars of name, postal address, telephone/fax number and e-mail of the facility manager or supervisor and plant construction engineer, detailed description and extent of facility (include engineering plans and specifications);

- A compliance agreement (Appendix-II) that the facility manager accept the responsibility for facility operation in accordance with the requirements of this standard;

- An assurance by the facility manager to provide that required equipment is on site;

- Calibration certificates of temperature probes issued by official or certified calibration company; and

- Data from at least for two preliminary performance tests indicating that the treatment plant meets performance requirements for certification as specified in this standard, including temperature print out sheets (data logger sheets) for test treatments.

1.4. Equipment/Materials needed to conduct performance test of the facility

The facility manager should provide the following equipment and materials to conduct a performance test for certification by USDA, APHIS in conjunction with Dte of PPQS:

- Copy of plans and specifications showing dimensions and other details of heating and temperature recording systems
- Certified calibrated thermometer (temperature range to at least 270^{0} F (132.2^{0} C)
- Stop watch and tape measure
- Temperature recording system to record temperature and processing time.

1.5. Minimum Standards & Specifications

In order to qualify for certification/re-certification, the facility must meet the following minimum standards:

- A minimum of two temperature probes (calibrated) should be placed in the commodity in order to accurately record the product temperature, so as to determine when the Niger seed reaches the target temperature;

- The scale on the temperature chart should not be less than 0.1 inch for each degree F or 5 min for each degree F;
- The time intervals between temperature readings on chart should not exceed four min between each reading;

- Accuracy of total temperature recording system should be within plus or minus 0.5 degree F (i.e. 0.3 degree C) of actual temperature as measured with a certified calibrated thermometer;

- Speed indicator present for continuous flow system;

- All the control valves that affect the heat flow to the treatment chamber should be secured to avoid manipulation during the treatment process by unauthorized personnel;
- Heating controls should be automatic and operate continuously throughout treatment process;

- Gear systems, if any used to control the Niger seed conveyor should be capable of adjusting the speed and flow to meet the treatment standards;

- The treatment plant should be provided with safety alarm or high visible blinking light fitted on to heaters or burners to indicate system failures and or when the treatment plant not operating properly; and,

- A system should be in place to divert any untreated seed for re-treatment.

1.6. Responsibilities of Dte of PPQS (NPPO)

The Dte of PPQS is responsible:

- To conduct regular auditing of facility to ensure all treatments of Niger seed will be performed as per the US requirements;

- To conduct post-treatment sampling of random lots of Niger seed, examine for contaminated weed seeds and test for germination using tetrazolium test;

- To maintain all the laboratory test records for three years or more for verification; and,

- To certify that each lot has been treated according to US requirements by issuing phytosanitary certificates.

1.7 Responsibilities of Facility Manager

The facility manager is responsible:

- to carry out all treatment operations through a technically qualified operator;

- to report to the PPA of any disruption in service of the facility for 10 days or more on account of any mechanical and electrical failures or annual maintenance checks or any lay-offs or other reasons;

- to maintain the equipments in good working condition and ensure periodical calibration of temperature sensors, control instruments and recorders;

- to maintain proper records of all treatment operations carried out at the facility including the data logs or temperature record sheets or diskettes;

- to ensure that all treatments of Niger seed are carried out strictly in accordance with the approved protocol specified by the USDA, PPQ; and,

- to abide by the instructions and guidelines issued by the PPA from time to time and extend all the cooperation to the PQ officers for carrying out performance tests and audit checks

2.0. SPECIFIC REQUIREMENTS

2.1. Preliminary testing

A preliminary testing of facility should be carried out by the facility operator to standardize the equipment performance and correct any deficiencies encountered during the testing. The preliminary testing should include evaluation of temperature probes (sensors) for accuracy of reading and sensitivity; evaluation of temperature chart for accuracy of recording at specified time intervals; evaluation of speed controller and gear system used to control the speed of Niger seed conveyor; and evaluation of performance of heating controls for continuous run and the safety alarm fitted on to the burners or other heating equipment and the functioning of all the control valves. The operator should conduct one empty trial run and other loaded with Niger seed. The data of preliminary testing should be forwarded to Dte of PPQS at the time of request for certification, including temperature print out sheets (data logger sheets) for test treatments to ensure that the facility established will meet the required minimum standards and specifications.

2.2. Performance test for certification

At the time of actual test treatment the certifying authority must ensure that the facility confirm to the minimum standards and specifications and the following operational requirements are met with:

- Sufficient quantity of Niger seeds for two test runs at the maximum load for one (1) hour must be on hand at the disposal of certifying authority
- All temperature sensors must be verified during the test runs or evidence provided that the sensors have been calibrated by an official or certified calibration company within 12 months period

- The temperature chart and conveyor speed must be verified to coincide with the readings taken during manual testing and calculation
- Check the continuity of the system to verify the lack of any cross-contamination

2.3. Approval of treatment facility

Final approval of Niger seed treatment facility will be given after two (2) consecutive successful runs of maximum capacity at the longest treating period (at least 15 minutes at 248 ^{0} F, minimum or 120 ^{0}C). Upon approval, a certificate will be issued jointly by the APHIS and the Dte of PPQS in the format prescribed in Appendix-III.

2.4. Testing for revalidation of certificate

A fresh performance test is must annually once for re-validation of certificate and whenever the facility has major break down of service or replacement and changes or modifications affected to the treatment plant.

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2.5. Documents & records required to be maintained

The facility operator will maintain following documents & records:

- a log book of all Niger seed treatments along with data log sheets of record of temperature;
- calibration certificate in respect of all temperature probes or sensors issued by an official or certified calibration company
- record of equipment break downs and repairs or replacements and changes or modifications to the treatment process
- a stock register showing inward and out ward entry of all the consignments received for treatment processing and exported out of the facility.

2.6. Auditing of facility

Dte of PPQS will conduct audit checks of the facility at six months intervals to ensure that treatments are performed in conformity with US requirements. The audit checks should include the verification of documents and records maintained by the approved facility related to treatment of Niger seed; checking of performance of heating equipments and temperature probes (sensors) and temperature recording system; random checking of samples drawn from treated lots to find contaminant weed seeds and pest infestation; and verification of sanitation and pest control measures adopted by the facility.

2.7. Reporting of treatments performed

The facility manager will report of all the treatments of Niger seed performed at the facility at monthly intervals to Dte PPQS. The reports should include information on re-treated Niger seed on account of faulty operation, if any.

2.8. Refusal for certification/de-recognition of treatment facility

If treatment standards are not met during performance testing, the certifying authority will record the test as not acceptable for certification. A copy of the data sheet with explanation as to why the test was not acceptable should be provided to the facility operator for corrective action. The facility will be retested after ensuring that necessary corrective actions are implemented. The certifying authority will derecognize the approved facility, in the event that necessary log books are not maintained of all Niger seed treatments or the changes or modifications in the treatment process without the approval of certifying authority or major non-compliances with US requirements revealed during audit checks of the facility.

3.0. OPERATIONAL REQUIREMENTS

3.1. Pretreatment Procedure

The facility operator should ensure at the beginning of each treatment that the required temperature sensors (calibrated) are correctly positioned to record the product temperature and ensure proper adjusting of the gear system of Niger seed conveyor and that all the valves and controls that affect heat flow to the treatment system must be secured. The facility operator must record date, lot number & signature of operator on each treatment chart before commencing each treatment operation.

3.2. Post treatment Procedure

After treatment and cooling, the Niger seed must be immediately be placed in new bags. The old bags must be treated or disposed of in a manner that will eliminate pest infestation. The bags of treated seed should be stored in separate warehouse away from the untreated seed lots to avoid re-infestation or cross contamination. The treated lots should be properly labeled indicating lot number, size (no of bags/quantity), date of treatment and signature of the operator.

3.3. Sampling of treated seed lots

The PQ officer of the Dte of PPQS will draw appropriate samples from treated lots and each sample should be labeled with following information viz., lot number, size, date of treatment, date of sampling, quantity of sample drawn and signature of sampler. The samples should be sealed and forwarded for laboratory testing at Regional Plant Quarantine Station of concerned area of jurisdiction.

3.4. Laboratory Testing of Samples

The samples should be examined at the quarantine laboratory for the presence of contaminant weed seeds, if any with the help of illuminated magnifier and tested for viability with tetrazolium test. The results of sample analysis will be recorded in appropriate register.

3.5. Issuance of Phytosanitary Certificate

The PQ officer of the Dte of PPQS should issue Phytosanitary certificate as per the model certificate prescribed by the IPPC certifying that each lot has been treated according to the US requirements and the treatment particulars should be endorsed on the Phytosanitary certificate so issued.

3.6. Measures to prevent re-infestation/cross-contamination

The treatment facility should have a cleaning and control programme. The facility manager will ensure that there are no potential breeding grounds for stored product pests in the premises so as to minimize the re-infestation or cross-contamination. Also he will ensure that only new bags are used for packing. Further a waste disposal programme as well as disposal of non-confirming or infested produce or spillages will be implemented to ensure minimum risk of contamination and elimination of breeding sites of stored product pests.

Appendix-I.

Application for Certification of Heat Treatment Facilities for Niger Seed for export to USA	
1.Name & Address of the Facility	
2. Name of the Facility Manager/Telephone/Fax/e-mail	**3. Constructed & Designed by**
4. Name of the Operator of the Facility/Telephone/Fax/E-mail	**5. Treatment Capacity of Facility**
6. Description of Facility:	
7.Dimensions of facility	**8. Number & Specifications of Heating Units**
9. Details of Temperature Recording system	**10. Number & Specification of temperature probes (sensors)**
11. Particulars of bank draft, if any:	**12. Signature of the Facility Manager with Date:**

Appendix-II

COMPLIANCE AGREEMENT	
1. From	2. To The Plant Protection Adviser Dte of Plant Protection Quarantine & Storage, N.H-Faridabad-121001
3. Agreement related to Setting up of heat treatment facilities for Niger Seed for export to USA.	
4. Applicable Phytosanitary Regulatory Requirements To meet the PPQ Regulation Requirements of USDA,	
5. I/we agree to the following: -to carry out all treatments through trained/qualified operator -to ensure periodical calibration of temperature sensors and maintain the facility in working condition -to provide all testing equipments, labour and extend necessary assistance and cooperation to the certifying authority during the visit to the facility for undertaking performance tests/audit checks of the facility -to follow all safety requirements or procedures during treatment operations and abide by the instructions and procedures required by the Plant Protection Adviser in the planning, setup and conduct of treatment - to carry out heat treatment of Niger seed as per the minimum standards and specifications prescribed by this standard -to main record of treatment operations as per format prescribed and preserve data log sheets for future verification -to pay TA/DA for the officer of the Dte PPQS as per admissible rules for carrying out performance test for certification as well as audit checks to the facility.	

6. Authorised Signatory:	**7. Designation**	**8.Date:**
_____ **(** **)**		**9.Place**

9. Signed in presence of	**Office Address**
_____ **(Name/ /Signature of PQ officer)**	
10. Approved by the PPA _____ **(** **)**	**Stamp of Organisation**