



**AMTEC**  
**Agricultural Machinery Testing and Evaluation Center**  
**1977**

**ACR 035:2023 CHECKLIST AND REMINDERS FOR THE AMTEC TEST CONDITIONS AND REQUIREMENTS FOR MULTICROP GRATER**

**■ Application for AMTEC Test**

The test applicant shall submit AMTEC-OP-F01 (Agricultural Machinery Test Application Form) together with the following requirements:

- AMTEC-OP-F16 (Waiver for Machine Specifications)
- AMTEC-OP-F18 (Data Privacy Consent Form)

**■ Technical Specifications of the Machine**

The test applicant shall submit any document/s indicating the specifications of the machine upon application for testing. In case the said document/s are not available, the applicant shall fill out the Machine Specifications Sheet provided by AMTEC upon request.

- Operator's manual with complete specifications as stated in Annex B of PNS/BAFS PAES 250:2018
- Brochure
- Machine specifications sheet (shall be filled out upon request and receipt of copy from AMTEC in case the manual or brochure is not available)

**■ Preparation and Operation of the Machine**

The multicrop grater shall be ready for testing. The officially designated operator of the test applicant shall operate, demonstrate, adjust, and repair. Meanwhile, the officially designated representative shall decide on matters related to the operation of the machine.

**■ Running-in of the Machine**

A test run shall be conducted prior the official test as to check its condition and make necessary adjustments to the machine.

**■ Test Material**

The test applicant shall prepare their desired material (fresh papaya, cassava, carrots, sweet potato, arrow root, and other crops) that are sufficient for the three (3) trials, the laboratory tests, and running-in. The test trials shall be at least fifteen (15) minutes.

**■ Other Test Necessities**

The following shall also be adequately supplied during the conduct of testing:

- Extension plugs for electric-powered graters.
- Weighing scale (at least 50 kg capacity)

**■ Machine Setting**

The multicrop grater shall be tested at the manufacturer's recommended setting for the following:

- Motor rpm: \_\_\_\_\_

**■ Performance and/or Fabrication Test Requirements**

AMTEC shall conduct various tests and verification on different performance parameters of the machine including the following requirements as per PNS/BAFS PAES 250:2018:

**■ Fabrication Requirements**

| Criteria             | Requirement as per PNS/BAFS PAES 249:2018   |
|----------------------|---|
| General Requirements | <input type="checkbox"/> Different components shall be generally made of steel bars, metal sheet/plate, and mild steel.<br><input type="checkbox"/> Parts that are in direct contact to the fresh crop and grated product shall be made of corrosion-resistant and food grade materials in compliance to the food safety standards.<br><input type="checkbox"/> It shall be ran by an electric motor. |
| Frame and Stand      | <input type="checkbox"/> It shall be able to support the whole grater assembly during operation.  |
| Safety Mechanism     | <input type="checkbox"/> It shall be present to prevent operators to use their bare hands in pushing the fresh crop into the hopper.  |



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Others  Bolts and nuts, screws, bearings, bushing, and seals shall conform to food safety requirements, PAES, or other international standards.

### ■ Performance Requirements

| Criteria             | Requirement as per PNS/BAFS PAES 249:2018 |                                      |
|----------------------|---|--------------------------------------|
| Performance criteria | Criteria                                  | Performance Data                     |
|                      | Grating capacity, kg/h                    | As per manufacturer's specifications |
|                      | Grating recovery, percent, minimum        | 94                                   |
|                      | Grating efficiency, percent, minimum      | 90                                   |

### ■ Safety, Workmanship, and Finish

- Noise level should conform with the provisions given in Annex A of PNS/BAFS PAES 249:2018.
- There shall be ear muffs or other ear protective device provided for the operators to use when 95 db (A) is exceeded during operation.
- Multicrop grater shall be free from any manufacturing defects that may be detrimental to its operation.
- Grating mechanism shall be replaceable when needed. Provisions for the adjustment of the clearance shall also be enforced.
- The rotating components of multicrop grater shall be statically and dynamically balanced. There shall be covers or guards for the rotating parts to protect the operator.
- No paints for parts that will be in direct contact with the crop.
- Any surfaces not in contact with the test materials shall be free from rust and shall be painted/coated properly.
- The external part of the multicrop grater shall be free from sharp edges and rough surfaces that may injure the operator. Warning notices shall be provided in accordance with PAES 101:2000 – Agricultural Machinery – Technical Means for Ensuring Safety – General.
- Mechanism for emergency stop shall be provided.
- Grating chamber shall be totally enclosed to avoid contamination.
- There shall be magnets to prevent metallic materials from entering the grating chamber.

### ■ Suspension and Termination of Test

If the test material does not conform with the recommended quantity and characteristics, AMTEC shall not proceed with the test. Should the test applicant request the conduct of the test despite the non-conformity to the test requirements identified by AMTEC, the applicant shall sign the AMTEC Waiver for Nonconformity to Test Requirements.

- AMTEC-OP-F24 (Waiver for Nonconformity to Test Requirements)

On the other hand, if the machine stops due to breakdown or malfunction during the test run affecting the machine's performance, the test may be suspended. If the machine cannot continue the operation, the test shall be consequently terminated.

### ■ Other Assistance During Test

1. For field and laboratory testing outside the AMTEC premises, the applicant shall shoulder the transportation expenses (i.e. fuel, toll fees, vehicle rental, plane fare, sea fare, etc.) of the AMTEC Staff assigned for the testing activity.
2. The applicant may assist the AMTEC Staff in looking and/or making arrangements for hotel accommodation near the test site.
3. The applicant shall provide drinking water to the AMTEC Staff during the testing activity.
4. The applicant shall provide any form of shed or sunshade (e.g. tent, umbrella, etc.) for the test equipment, samples (if applicable) and AMTEC Staff during the testing activity in the field.
5. The applicant is requested to assist the AMTEC Staff in finding any means to access a safe and convenient restroom near the test site during the testing activity.



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**■ Testing Fee**

1. The testing fee for multicrop grater is PHP 9,000.
2. To proceed through AMTEC test, the test applicant shall settle at least 50 % of the testing fee which is non-refundable but transferrable.
3. In cases of additional testing during the field, the test applicant shall immediately pass the required documents and settle at least 50% of the testing fee within 5 working days after the testing proper.  
 Additional testing, number of machines: \_\_\_\_\_
4. Payment/s shall be directed to the following:  
 Through UPLB Cashier's Office (8AM to 12PM): AMTEC Trust Fund Code No. 8271632-40A2040101000  
 Through Landbank (8:30AM to 3PM): UPLB Trust Fund Account No. 1892100507 or UPLB FI Account No. 1892-1003-29

**■ Other Reminders**

1. All manufacturers, fabricators, assemblers, and importers (MFAI) shall secure a Certificate of Conformity (CC) from the Bureau of Agricultural and Fisheries Engineering (BAFE) which guarantees that their agricultural and fisheries machinery conforms with PNS/BAFS PABES or other relevant standards identified by BAFE. More information about the application for CC can be found at <http://bafe.da.gov.ph/index.php/certificate-of-conformity-of-manufacturers-fabricators-assemblers-distributors-dealers-importers-and-exporters/>.
2. All MFAI shall employ an Agricultural and Biosystems Engineer (ABE), as mandated by RA 10915 (ABE Law), who shall facilitate all activities and concerns pertinent to AMTEC testing and BAFE requirements. Do you currently have an ABE in your roster of employees?  Yes  No