

PHILIPPINE NATIONAL STANDARD

PNS/PAES 171:2015
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ICS 65.060.30

Agricultural machinery – Rice precision seeder – Specifications



BUREAU OF PRODUCT STANDARDS*

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National Foreword

The Philippine Agricultural Engineering Standards PAES 171:2015, Agricultural machinery – Rice precision seeder – Specifications was approved for adoption as Philippine National Standard by the Bureau of Philippine Standards upon the recommendation of the Agricultural Machinery Testing and Evaluation Center (AMTEC) and the Philippine Council for Agriculture, Aquatic and Natural Resources Research and Development of the Department of Science and Technology (PCAARRD-DOST).

Foreword

The formulation of this national standard was initiated by the Agricultural Machinery Testing and Evaluation Center (AMTEC) under the project entitled “Development of Standards for Rice Production and Postproduction Machinery” which was funded by the Philippine Council for Agriculture, Aquatic and Natural Resources Research and Development (PCAARRD) of the Department of Science and Technology (DOST).

This standard has been technically prepared in accordance with PAES 010-2 – Rules for the Structure and Drafting of International Standards.

The word “shall” is used to indicate mandatory requirements to conform to the standard.

The word “should” is used to indicate that among several possibilities one is recommended as particularly suitable without mentioning or excluding others.

1 Scope

This standard specifies the requirements for manufacture and performance of mechanically operated rice precision seeder for dryland and wetland operation.

2 References

The following normative document contains provisions, which through reference in this text, constitute provisions of this National Standard:

PNS/PAES 102:2000 Agricultural Machinery – Operator’s Manual – Content and Presentation

PNS/PAES 103:2000 Agricultural Machinery – Method of Sampling

PNS/PAES 122:2001 Agricultural Machinery – Seeder and Planter – Specifications

PNS/PAES 172:2015 Agricultural Machinery – Rice Precision Seeder - Methods of Test

3 Definitions

For the purpose of this standard, the following definitions shall apply:

3.1

grain seeder

seeder

planting equipment used to mechanically drop seeds in the soil for crop production

3.2

precision seeder

precision planter

type of planting equipment that accurately drops the seeds or group of seeds in equidistant spaces along a furrow (Figure 1)

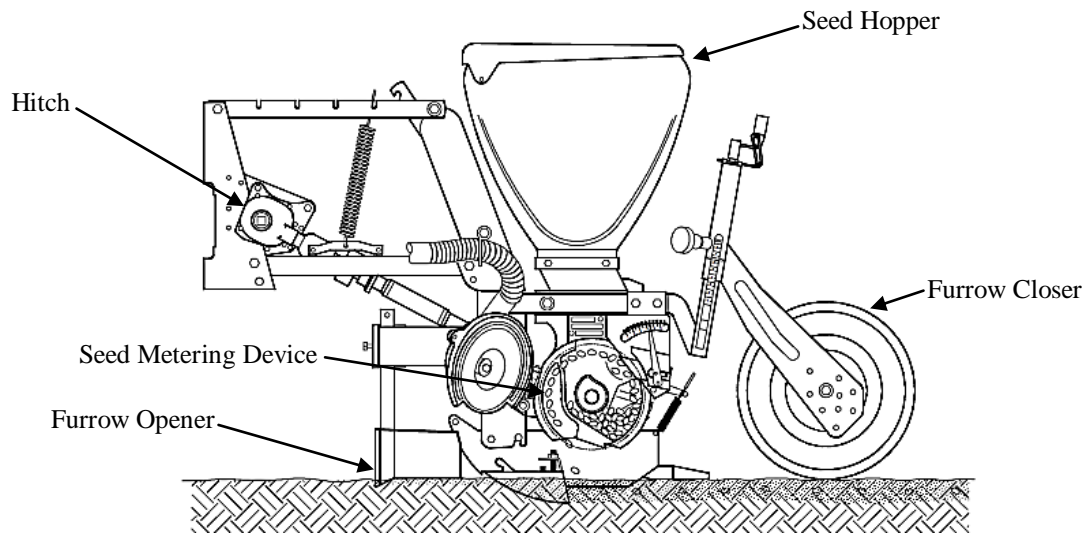


Figure 1 - Precision seeder/precision planter without fertilizer applicator

3.3

seeding rate

amount of seeds that can be planted per unit area, expressed in kg/ha

4 **Classification**

The classification of rice precision seeder shall be based on the following:

4.1 **Riding type**

Type of self-propelled rice precision seeder that allows operator to ride on the machine during operation (Figure 2)

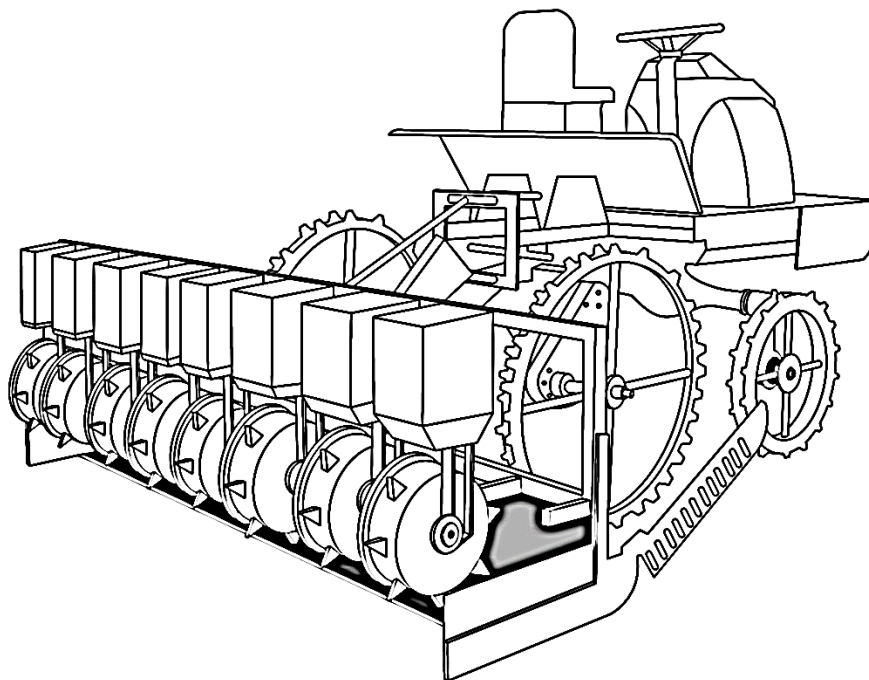


Figure 2 - Self-propelled rice precision seeder.

4.2 Tractor Attachment

Type of rice precision seeder which is pulled by a four-wheel tractor (Figure 3)

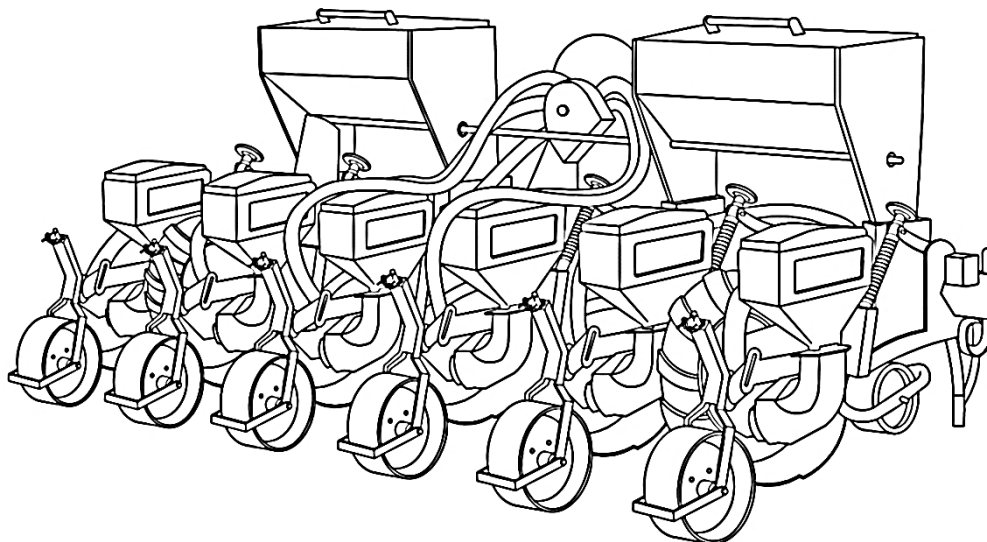


Figure 3 - Rice precision seeder attachment to a four wheel tractor.

5 Fabrication Requirements

- 5.1 The rice precision seeder shall be generally made of steel and/or engineering plastic.
- 5.2 The seed plate shall be replaceable.
- 5.3 Hoppers shall be designed to contain seed with minimum frequency of refilling during operation.
- 5.4 The hill spacing should be adjustable.
- 5.5 Multi-row seeder shall have fixed row spacing.

6 Performance Requirements

- 6.1 The performance criteria for rice precision seeder shall be as specified in Table 1.

Table 1 – Minimum Performance Requirement for Rice Precision Seeder

CRITERIA	PERFORMANCE DATA
Field Efficiency (%), minimum	60
Seeding Rate (kg/ha), minimum	15
Seeding Efficiency (%), minimum	85
Noise level, dB(A), maximum	92*

*Allowable noise level for six (6) hours of continuous exposure based on Occupational Safety Health Standards, Department of Labor and Employment, Philippines, 2013.

6.2 The seeder shall have the capability to provide uniform seed placement.

6.3 During operation, the seeder shall produce good quality work such as accuracy and uniformity of seed, ease of operation and maintenance, even spacing, and minimum seed damage.

7 Workmanship and Finish

7.1 The seeder shall be free from manufacturing defects that may be detrimental to its operation.

7.2 Any coated metallic surface shall be free from rust

7.3 The seeder shall be free from sharp edges and surfaces that may injure the operator.

8 Warranty for Construction and Services

8.1 One (1) year warranty on parts and services, in accordance to the manufacturer's warranty policy, shall be provided. This shall start upon the acceptance of the rice precision seeder by the end user.

8.2 There shall be no breakdown of its major components under normal use within one (1) year from acceptance of the rice precision seeder by the end-user in accordance to the manufacturer's warranty policy.

9 Maintenance and Operation

9.1 Each rice precision seeder unit shall be provided with a set of manufacturer's standard tools required for maintenance.

9.2 An operator's manual which conforms to PNS/PAES 102:2000 Agricultural Machinery – Operator's Manual – Content and Presentation shall be provided.

9.3 A training on the proper operation and maintenance shall be provided by the supplier to the operator.

10 Testing

Rice precision seeder shall be tested in accordance with PNS/PAES 172:2015-Agricultural Machinery: Rice Precision Seeder – Methods of Test.

11 Marking and Labelling

11.1 The rice precision seeder shall be marked in English, with the following information, using a plate, stencil or by directly punching it at the most conspicuous place:

11.1.1 Brand name or Registered trademark of the manufacturer

11.1.2 Model and/or Serial number

11.1.3 Name, address and contact number of the distributor

11.1.4 Country of manufacture

11.1.5 Power requirement, kW

11.2 Safety/ precautionary markings shall be provided. Markings shall be stated in English or Filipino and shall be printed in red color with a white background.

11.3 The markings shall have a durable bond with the base surface material. The markings shall be water and heat resistant under normal cleaning procedures. It shall not fade, discolor, crack or peel and shall remain legible.

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