Foreword

The formulation of this national standard was initiated by the Agricultural Machinery Testing and Evaluation Center (AMTEC) under the project entitled "Enhancing the Implementation of AFMA Through Improved Agricultural Engineering Standards" which was funded by the Bureau of Agricultural Research (BAR) of the Department of Agriculture (DA).

This standard has been technically prepared in accordance with PNS 01-4:1998 (ISO/IEC Directives Part 3:1997) – Rules for the Structure and Drafting of International Standards.

The word “shall” is used to indicate requirements strictly to be followed in order to conform to the standard and from which no deviation is permitted.

The word “should” is used to indicate that among several possibilities one is recommended as particularly suitable, without mentioning or excluding others, or that certain course of action is preferred but not necessarily required.

In the preparation of this standard, the following documents/publications were considered:

Regional Network for Agricultural Machinery (RNAM) Test Codes And Procedures for Farm Machinery. Technical Series No. 12 :1983.


1 Scope

This standard specifies the requirements for construction and performance of various types of grain seeders with or without fertilizer applicator. This standard is not applicable to wetland seeder and planter.

2 References

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


PAES 103:2000, Agricultural Machinery – Method of Sampling

PAES 123:2001, Agricultural Machinery – Seeder and Planter – Methods of Test

3 Definition

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

3.1 grain seeder
seeder
planting equipment used to deposit seeds in the soil for crop production

NOTE It can be a manually-operated, animal-drawn or tractor power-driven seeder.

3.2 field efficiency
ratio of effective field capacity to the theoretical field capacity

NOTE The field efficiency is determined by the following formula:

\[ E_f = \frac{efc}{tfc} \times 100 \]

where:
- \( E_f \) is the field efficiency, %
- \( efc \) is the effective field capacity, \( m^2/h \)
- \( tfc \) is the theoretical field capacity, \( m^2/h \)
3.3 effective field capacity
actual rate of being able to plant a given area per unit of time

NOTE The time pertains to the actual time which includes the time spent for turning at headland, adjustment of machine and machine trouble.

3.4 theoretical field capacity
computed rate of being able to plant a given area per unit of time

3.5 seed delivery rate
amount of seeds that can be planted per unit area

4 Classification

4.1 Manually-operated or hand seeder (Figure 1)

This is a type of seeder which deposits the seeds in holes with spacing set by the operator.

Figure 1 – Manually-Operated Seeder

4.2 Animal-drawn seeder (see Figure 2)
4.3 Tractor power-driven seeder and planter

This is a type of seeder with metering mechanisms driven by the ground wheels or by power-take-off from a tractor

4.3.1 Seed drill

This is a type of tractor power-driven seeder which drills and deposits the seeds at a specified rate and depth and in narrow-spaced rows. It cannot deposit the seeds in hills or even in check rows. (see Figure 3 and Figure 4)