

Field Inspection Guide

**For Pigeon Pea
Varieties Of Quality
Declared Seed (QDS)**

Introduction

In Quality Declared Seed (QDS) Certification, field inspection, lot inspection and sampling for laboratory testing should be done by a well-trained and authorised person. The skills and procedures should be clearly set out to avoid decision making based on personal opinions and allows uniformity of procedures used by other inspectors.

To aid inspection of QDS of various crop varieties, it is key to deploy easy-to-use inspection guides for consistency.

This guide details information on varietal description, attributes, geographical suitability, yield potential and lifecycle of the different varieties. Also provided is information on resistance/ susceptibility to pests and diseases, isolation distances as well as identification of volunteers. This crop guide is developed with descriptive information for farmer preferred variety of beans prominently marketed as QDS.

■ Purpose of field inspection

1. Confirm that the cultivar is as stated in the planting return.
2. Check that the isolation of the crop is adequate.
3. Check the cropping history of the seed field.
4. Assess cultivar impurities, other species, weeds and diseases against prescribed standards during its growth.

Important stages for conducting inspection

There are six stages for which inspection is useful in ensuring the quality of the QDS under production. These include:

- 1 Pre-planting inspection:** focuses on suitability of selected land for production, cropping history and if there is any problem with isolation distances
- 2 Seedling inspection:** It's done between 2 to 3 weeks after planting and it focusses on identification of variety characteristics and confirms whether the right variety is planted
- 3 Preliminary inspection:** This inspection is done 1 to 2 weeks before flowering to allow rouging to be done without contaminating the seed crop occurs.
- 4 Flowering inspection:** This is the most crucial inspection that help in identification of the variety, off-types counts to determine the degree on contamination and assessing pests and disease occurrence.
- 5 Pre-harvest inspection:** This is done when the crop is physiologically mature but before its harvested. During this stage the inspector checks on the disease and pests occurrences; make further identification of the variety; check on the off-types and make counts; and assesses possible yield of the seed crop.
- 6 Post-Harvest inspection/Farm stock approval:** At this stage the inspector checks on sorting as method of seed cleaning; availability and quality of storage facility; estimates the yields and takes samples for laboratory testing.

NOTE

- a. In general, the minimum period between a seed crop and a previous crop of the same species is 2 seasons, except for Irish potato, which is 3 seasons.
- b. It is important to conduct inspection during the time when the off-types are well distinguishable. i.e. especially at flowering time.
- c. For all crops, the period between a seed crop and a previous crop of the same species is 2 seasons.
- d. Check out inspection walking patterns in the Seed Certification Book of Uganda Pg. 10

Procedures for conducting inspection

1. **Registration of seed grower:** QDS producer must be registered and well trained in seed production.
2. **Registration of seed fields:** This is also known as submission of a planting return. The seed grower compiles details of planting within a period of two weeks and submit to DAO/NSCS for inspection. This should be done using Planting return submission form available at DAOs offices, two weeks after planting.
3. **First inspection;** the inspection upon receiving the planting return submission, he/she makes appointment when to do inspection. This inspection is suppose to provide recommendation to the farmer for corrective action.
4. **Second Inspection;** involves conducting counts for off-types; assessing pests and disease presence. This is also the final inspection.
5. **Final inspection report (rejecting or accepting of fields).** Seed grower is to be given direction on whether the field is rejected or accepted.

Pigeon peas

Two varieties have been released by National Agricultural Research Organisation (NARO) and these include: SEPI 1 and SEPI 2. The breeding for these varieties were done in ICRISAT, Malawi and evaluated in Uganda for adaptability.

SEPI 1 is more popular than SEPI 2 because of its semi-branching nature

which helps to resist pest attacks.

Off-types can be identified from growth habit, stem color and flower color.

Diseases of pigeon peas include Cercospora leaf spot and Fusarium wilt. SEPI 2 is more susceptible to Cercospora Leaf Spot than SEPI 1. Fusarium wilt is mainly prevalent in the Northern Uganda.

01

SEPI 1 VARIETY

Potential yield

1.8 to 3.4t/ha

Maturity

Medium maturing of 77 to 87 days to 50% flowering and between 105 and 139 days to 75% maturity.

Phenotypic Characteristics

Vegetative stage

- Green stem colour
- Indeterminate and semi-branching growth (main stem continues to elongate indefinitely)



Green stem

Reproductive stage

- Yellow flowers
- Green immature pod color
- 5 to 6 seeds per pod
- Grain size is approximately 13 to 15gms per 100 seeds
- Seed colour is cream
- Hilum color is reddish brown hilum

**Yellow flowers****Cream seeds with
reddish brown hilum**

02

SEPI 2 VARIETY

| | |
|-----------------|---|
| Potential yield | 1.5 t/ha |
| Maturity | Short maturing: 60 to 70 days to 50% flowering and 110-120 days to 75% maturity |

Phenotypic Characteristics**Vegetative stage**

- Green stem with purple stripes
- Determinate growth and compact branching



**Determinate growth
(growth ends with
formation of flowers)
and compact branching**

Reproductive stage

- Yellow flowers with red base
- 6 to 8 seeds per pod
- Grain size is approximately 13g per 100 seeds
- Green pods with purple stripes



Annex

Land rotations, minimum isolation and maximum off-types permissible

| Crop Species | Land rotation (seasons) | Minimum Isolation (m) | Maximum off-types (%) |
|-----------------------------|-------------------------|-----------------------|-----------------------|
| Cereals | 1 | | |
| Sorghum | 1 | 100 | 20 |
| Pearl millet | 1 | 100 | 20 |
| Finger millet | 1 | | 20 |
| Pulses | | | |
| Beans | 1 | 20 | 20 |
| Cowpeas | 3 | 20 | 20 |
| Pigeon peas | 3 | 20 | 20 |
| Oil seed crops | | | |
| Soybean | 1 | 5 | 20 |
| Groundnut | 1 | 5 | 20 |
| Sesame | 2 | 50 | 20 |
| Root and Tuber Crops | | | |
| Cassava | 3 | | 20 |
| Irish potato | 3 | 30 | 10 |
| Sweet Potato | 3 | | 10 |

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