Field Inspection Guide

For Groundnut Varieties Of Quality Declared Seed (QDS)

ISSD Uganda

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.

Groundnuts

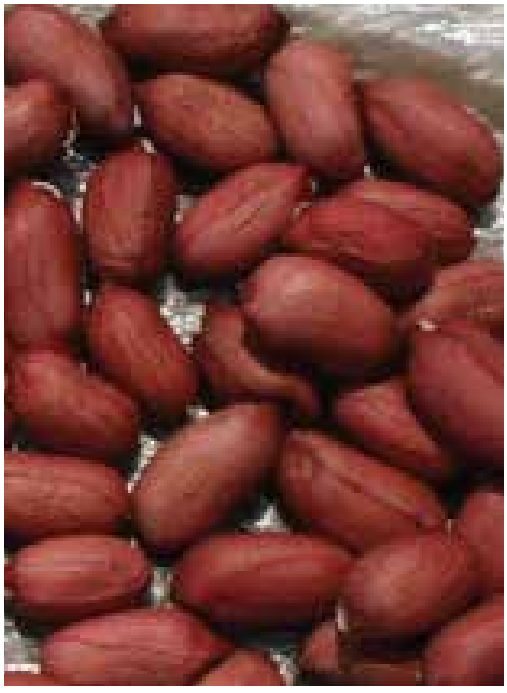
More than 14 groundnut varieties both red seeded varieties and Tan seed color have been released by the National Agricultural Research Organization (NARO).

Red seeded varieties (Serenut 5R, 8R and 14R) are preferred by farmers due to their distinct taste. Red seeded varieties have relatively darker green leaves compared to the Tan ones.

When planting groundnuts, it is advised to create an isolation distance of 3 meters. Please note that off types and volunteers in groundnuts fields are majorly identified through seed color, growth patterns and lightness or darkness of leaves.

Comparison of traits of Groundnut Varieties

Seed color



Red seed colour

Tan seed colour

Growth pattern

Short spreading growth

Tall erect growth

Leaf colour

Light green leaves

Dark green leaves

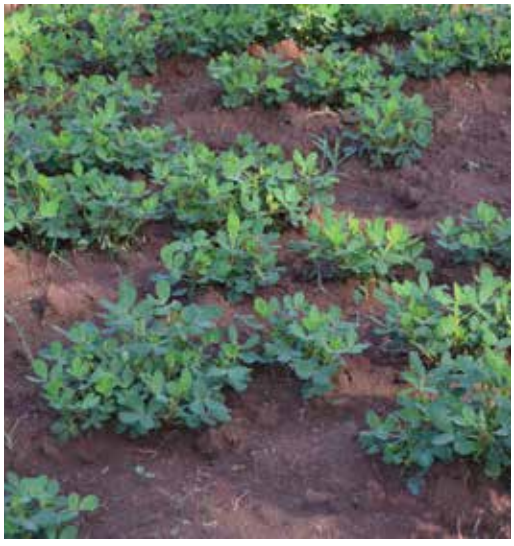
01

SERENUT 5R GROUNDNUT VARIETY

Year of Release	2010
Maturity period	105 days
Yield	1000 – 1200 kg/acre
Cropping zone	Highly preferred countrywide because it is widely adaptable
Resistance attributes	Resistant to Groundnut Rosette and Leaf Spot diseases
Other uses	For butter and Oil

Vegetative stage

- Dark green leaves
- Short spreading plants
- Non-pigmented green stems



Short plants

Spreading growth habit

Dark green egg-shaped leaves with narrower end at the base, not hairy

Non-pigmented green stems

Pod characteristics

- Slight pod beak thus easy to shell
- Medium pod constriction and reticulation
- Red medium sized round seeds

Slight pod beak; moderate to pronounced constriction; moderate reticulation

Freshly dried red seeds

Dried and stored seeds

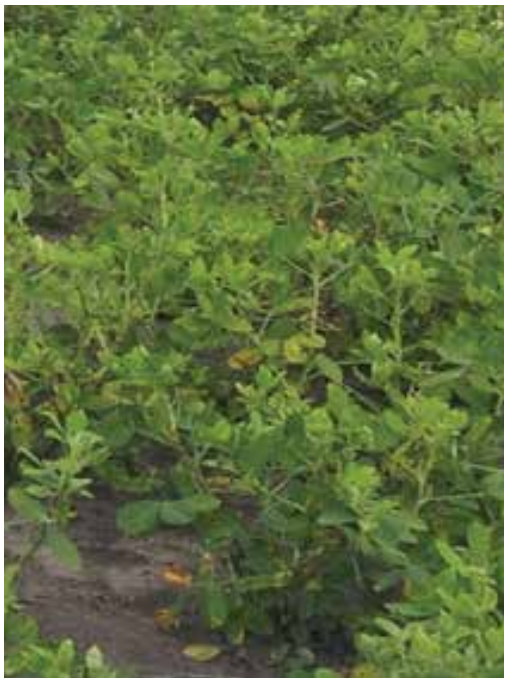
02

SERENUT 6T GROUNDNUT VARIETY

Year of Release	2010
Maturity period	90-100 days
Yield	1000-1500 kg per acre
Cropping zone	Countrywide
Resistance attributes	Resistant to Groundnut Rosette Virus and Leaf Spot diseases
Other attributes	Mostly used for butter, oil and confectionary

Vegetative characteristics

- Tall bunchy plants
- Light green leaves



Tall bunchy plants

Light green leaves

Maturity phase

- Slight pod beak and reticulation thus easy to shell
- Large tan seed
- Seed shape: round

Slight pod beak and reticulation; freshly dried large tan seeds

Stored seed

03

SERENUT 8 GROUNDNUT VARIETY

Year released	2010
Maturity period	100-110 days
Yield	1,000-1,500 kg per ha
Resistance/tolerance	Resistant to Rosette and Leaf Spot diseases tolerant to drought thus locally known as *Acheng*
Other attributes	Used for butter, oil and confectionary

Vegetative stage

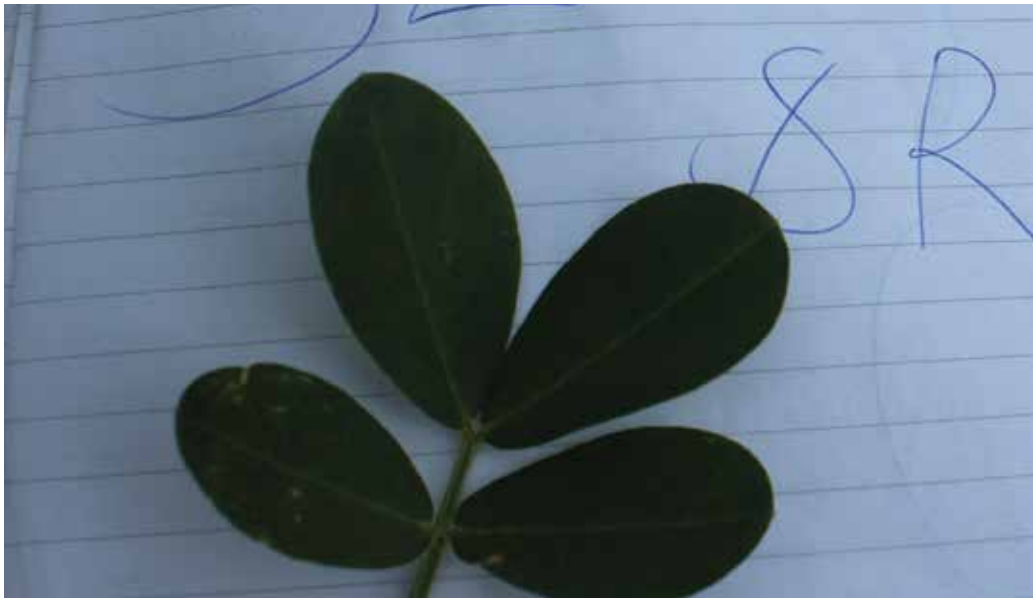
- Takes 28 days
- Decumbent growth (trail on the ground and tends to rise at the apex)
- Intense stem pigmentation and purple pegs
- Short spreading plants with plant height of about 19 cm
- Medium sized light green obovate shaped leaves (egg-shaped with the narrower end at the base)

Short spreading plants

Plants trail on the ground and rise at apex

Intense stem pigmentation

Purple pegs



Egg shaped leaves with narrower end at the base

Medium sized dark green hairy leaves

Maturity characteristics

- Takes 60 days from flowering to harvesting
- Dominantly 2 seeds per pod but may vary from 1 to 3 seeds
- Medium to large dark red oblong seeds with prominent veins
- Slight pod beak and constriction thus easy to shell
- Slight pod reticulation thus easy to harvest

Two seeds per pod with slight pod reticulation, beak and constriction

Freshly dried red seeds

Seeds dried and stored for some time

04

SERENUT 11T GROUDNUT VARIETY

Year Released	2011
Maturity period	100 - 110 days
Yield	1,000 -1,500 kg per acre
Cropping zone	Country-wide
Resistance/Tolerance	Resistant to Groundnut Rosette and Leaf Spot diseases Drought tolerant
Other attributes	Mostly used for butter and confectionery

Vegetative stage

- Procumbent-2 growth habit (grows trailing without rooting at the nodes)
- Plant height is 20.3 cm
- Intense stem pigmentation
- Medium-sized light green obovate leaf (egg-shaped with the narrower end at the base)

Medium sized light green leaves

Maturity characteristics

- Brown pod with moderate reticulation and beak
- Slight pod constriction
- Number of seed per pod - dominantly 2 seeds but may vary from 1 to 3 seeds per pod
- Medium to large tan seed
- Seed Shape: Slightly elongated with round end

Slight pod constriction, moderate beak and reticulation

Large tan freshly dried seeds

Dried stored seeds

05

SERENUT 14R GROUDNUT VARIETY

Year of release	2011
Maturity period	100 -110 days
Yield	1,000 -1,500 kgs per acre
Cropping zone	Country-wide
Resistance attributes	Resistant to Groundnut Rosette disease
Other attributes	Mostly used for butter, oil and confectionary

Vegetative characteristics

- Indeterminate, may stay green up to maturity
- Decumbent - 3 growth habit (trail on the ground and then tend to rise at their apex)
- Tall plant of height 28cm
- Green stem pigmentation
- Dark green obovate leaf

Dark green obovate leaves (egg shaped with narrower end at the base)

Decumbent -3 growth (trails on the ground and then tend to rise at their apex)

Maturity

- Brown pod with slight reticulation and moderate beak and constriction
- Number of seeds per pod: Dominantly 2, but may vary from 1 to 3 seeds per pod
- Large dark red seeds with light veins

Brown pods with moderate reticulation, beak and constriction

Large dark red freshly dried seeds

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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