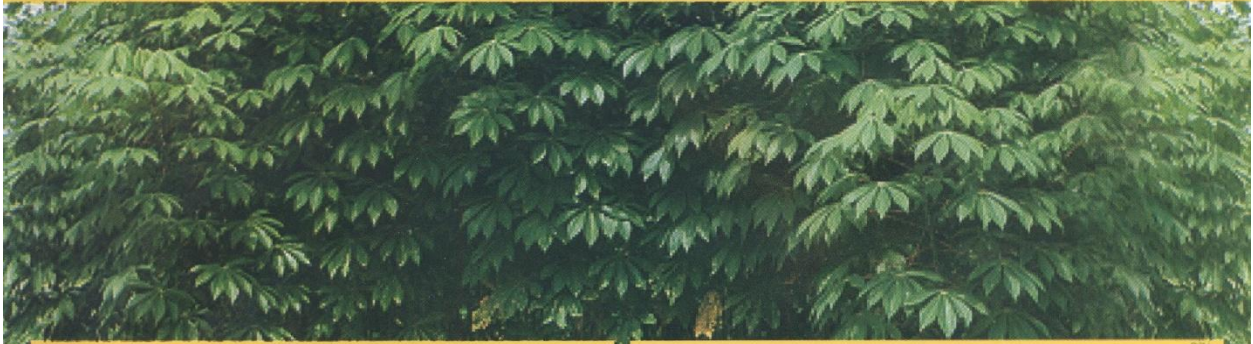




Republic Of Ghana

## MINISTRY OF FOOD AND AGRICULTURE



## *Procedures for Release and Registration of Crop Genetic Material*



**GOVERNMENT OF GHANA**  
**MINISTRY OF FOOD AND AGRICULTURE**

**MANUAL OF PROCEDURE FOR REGISTRATION  
OF SPECIES AND VARIETIES IN GHANA**

## **FOREWORD**

Breeding and release of planting genetic materials is a major agriculture research activity aimed at enhancing productivity under various conditions. The National Varietal Release and Registration Committee (NVRRC) is the authority responsible for approving the official release of new crop varieties in Ghana based on laid down procedures. The established genetic material release procedures for Ghana are, however, not consistent with those of other countries within the sub-region. The inconsistency among the national variety release procedures is hampering free movement of germplasm and improved varieties of crops within the sub-region due to various restrictions by member countries. In an era of scarce resources for research and development, it is important that governments in the sub-region pool their resources for dealing with common problems.

The harmonization of the variety release and registration process in Ghana with others in the sub-region is an effort initiated by CORAF through the auspices of the West Africa Agricultural Productivity Programme (WAAPP). The harmonization process seeks to define clearly the sequence of processes, interfaces and responsibilities that are required for the establishment of an effective variety release and registration mechanism which will be in harmony with those of the sub-region. The main objective of the process is to provide for free movement including marketing and use of released and registered genetic materials within the sub-region. The current document clearly outlines the procedures for the release and registration of genetic materials in Ghana. The document also includes protocols for testing for Distinctness, Uniformity and Stability (DUS); and Value for Cultivation and Use (VCU) for the following crops: Maize, Rice, Cowpea, Cassava, Yam, Sorghum, Groundnuts, Sweetpotato as appendices. The document is not conclusive in content; testing protocols for other crops will be developed and added as and when necessary.

The current document apart from being consistent with those of other countries in the sub-region, is also consistent with section 43 of part one of Act 803 (Plant and Fertilizer Act), 2010 which provides for the registration of genetic materials and thereby contribute to accelerating agricultural development within member countries of ECOWAS.

## **EXECUTIVE SUMMARY**

This manual of procedures for the registration of plant species and varieties proposes the establishment of a registration system for cultivated plant materials for Ghana. The purpose of the manual is to clearly define sequence of processes, interfaces and responsibilities necessary for the establishment of an effective registration system that will be in harmony with those of the sub-region.

The manual spells out clear procedures for applying for the registration of a plant variety or species, procedures for examination of claims by the applicant and procedures for approving the registration of the proposed variety. The manual also addresses how issues dealing with Confidential Business Information (CBI) should be handled during and after the registration process. Provision has also been made for an applicant to appeal against a decision of rejection of an application for registration.

In addition to the procedures, the manual provides protocols for examining varieties presented for registration and the use of independent assessors to verify information supplied by the applicant about the proposed variety for registration.

The responsibility for managing the registration system rests with the National Seed Council (NSC) under the Ministry of Food and Agriculture (MoFA). The National Variety Release and Registration Committee (NVRRC), of the NSC, will be responsible for the day-to-day administration of the registration system and establishment of the catalogue.

The registration system defined by the manual provides opportunities for registered plant species and varieties in Ghana to be also listed into a sub-regional catalogue.

## Table of Contents

FOREWORD .....	3
EXECUTIVE SUMMARY .....	4
1. Purpose:.....	7
2. Scope:.....	7
3. References:.....	7
List of Abbreviations .....	8
5. Responsibility and Authority:.....	8
6. Activities .....	9
6.1 Receipt and verification of application .....	9
6.2 Request for additional information .....	9
6.3 Technical examination .....	10
6.4 Rejection notification.....	10
6.5 Recommendation and registration .....	10
6.6 Information to be provided to UEMOA (Sub-Regional Authority) .....	10
7. Records to be kept by the NSC Secretariat:.....	11
ANNEXES .....	12
ANNEX A: APPLICATION FOR REGISTRATION IN THE NATIONAL CROP VARIETIES/SPECIES CATALOGUE.....	12
ANNEX B: RECORD OF APPLICATION RECEIVED.....	16
ANNEX C: VERIFICATION REPORT FORMAT.....	17
ANNEX D: FORMAT FOR REQUESTING ADDITIONAL INFORMATION .....	18
ANNEX E: NATIONAL TESTING PROTOCOLS FOR DUS AND VCU .....	19
CASSAVA (DUS) * .....	20
CASSAVA VCU .....	27
YAM (DUS).....	28
YAM (DUS)*.....	32
YAM VCU.....	38
MAIZE (DUS) * .....	40
MAIZE: VCU .....	47
ANNEX F: TECHNICAL REPORTING FORMAT .....	48
ANNEX G: FORMAT OF NON-APPROVAL NOTIFICATION MEMO .....	51

ANNEX H:	APPROVAL NOTIFICATION FORMAT .....	52
ANNEX I:	FORMAT FOR PUBLISHING VARIETY INFORMATION IN AN OFFICIAL BULLETING	53
ANNEX J:	CONFIDENTIAL BUSINESS INFORMATION .....	54
ANNEX K:	FORMAT FOR CONFIDENTIAL BUSINESS INFORMATION .....	58
ANNEX L:	CBI DENIAL NOTIFICATION FORMAT .....	59
ANNEX M:	FORMAT FOR NOTIFICATION OF ACCEPTANCE OF CBI CLAIMS .....	60
ANNEX N:	FORMAT FOR THE LISTING OF TECHNICAL EXPERTS .....	61
ANNEX O:	FORMAT FOR REGISTRY OF CBI UTILIZATION.....	62
ANNEX P:	APPEAL PROCEDURE.....	63
ANNEX Q:	FORMAT FOR APPEAL REQUEST .....	65
ANNEX R:	FORMAT FOR APPEAL MEETING .....	67

## 1. Purpose

- 1.1 The purpose of this manual is to define the sequence of events, interfaces and responsibilities involved in the process of registration of a genetic material in the national catalogue for crop varieties in Ghana.

## 2. Scope

- 2.1 The scope of the procedure covers registration of varieties (old and new) the national catalogue for crop species/varieties in Ghana.

## 3. References

- 3.1 Draft implementing regulation 2006/CM/UEMOA Sep. /06  
3.2 Bangui Agreement March 1977  
3.3 Crop Requirements for DUS testing  
3.4 Crop Requirements for VCU  
3.5 Test guidelines adopted by UPOV as listed in document TGP2  
3.6 Other existing national tests guidelines used for DUS testing. E.g. IPGRI descriptor for crops

## 4. Definitions/List of Abbreviations

### Definitions

- 4.1 **Applicant:** Individuals; institutions/organizations with an office or legal representation in UEMOA territory that applies for the registration of a new variety to the common catalogue.
- 4.2 **Breeder:** The person who bred, or identified and developed a variety.
- 4.3 **Landrace:** A variety that has been grown by traditional farmers, and has not been influenced by modern breeding practices.
- 4.4 **List A:** Varieties, the seed can be multiplied or commercialized within the territory of one or several UEMOA member states, as “foundation (basic) or certified (standard) seed”.
- 4.5 **List B:** varieties, the seed can be multiplied within UEMOA for their exportation outside the member states as certified (standard).
- 4.6 **Local Variety:** A variety developed, adapted, and grown in a particular environment for a long period of time. (>25 years)

- 4.7 **Curator:** The person or institution responsible for the maintenance of a variety listed in the sub-regional/national variety catalogue. The curator shall ensure that the variety remains true to type.
- 4.8 **Sub-regional catalogue:** list of varieties or plant types which can be commercialized within UEMOA territory.
- 4.9 **Variety:** A plant grouping within a single botanical taxon of the lowest known rank, which grouping, irrespective of whether the conditions for the grant of a plant breeder's right are fully met, can be defined by the expression of the characteristics resulting from a given genotype or combination of genotypes; distinguished from any other plant grouping by the expression of at least one of the said characteristics and considered as a unit with regard to its suitability for being propagated unchanged over a period of time.

### **List of Abbreviations**

- 4.10 **CBI:** Confidential Business Information
- 4.11 **COAfeV:** West African Catalogue of Plant Species and Varieties
- 4.12 **DUS:** Distinctness, Uniformity, Stability
- 4.13 **GMO:** Genetically Modified Organisms
- 4.14 **NARS:** National Agricultural Research Systems
- 4.15 **NSC:** National Seed Council
- 4.16 **NVRRC:** National Variety Release and Registration Committee
- 4.17 **UEMOA:** West Africa Economic and Monetary Union
- 4.18 **UPOV:** Union for the Protection of New Varieties of Plants
- 4.19 **VCU:** Value for Cultivation and Use.

### **5. Responsibility and Authority**

- 5.1 The NSC is responsible for receiving, verifying and examining the application for registration.
- 5.2 The NSC is responsible for receiving and storing the reference seed sample (including vegetatively propagated materials).
- 5.3 The NSC is responsible for requesting additional information from the applicant if required.



- 5.4 The NSC is responsible for notifying the applicant of the approval or rejection of a new variety and subsequent removal of a variety from the catalogue on the basis of detection of discrepancies /violation in the application process.
- 5.5 The NSC of Ghana is responsible for updating the national catalogue.
- 5.6 The NSC is responsible for informing UEMOA of the new variety registered.

## **6. Activities**

### **6.1 Receipt and verification of application**

- 6.1.1 The secretariat of NSC will receive from an applicant the registration form including the information of the genetic origin, description of the commercial variety, results of at least three trials conducted at national level (multi-locational) for two growing cycles prior to the application and the ranking of the variety. A reference sample must also be deposited with its corresponding phytosanitary certificate. **The application format is in Annex A.**
  - 6.1.1.1 If the new variety is a GMO, it must be specified as such.
  - 6.1.1.2 In the case of GMO varieties, the NVRRC of NSC will facilitate the conduct of the trials following the established provisions.
- 6.1.2 The NSC will verify if the applicant has the right to apply for registration ensuring the completeness of the data, the newness of the variety etc.
- 6.1.3 The NSC will record the application received (Annex B) and assign a file number.
- 6.1.4 The secretariat of NSC will prepare a report of verification within 14 working days from the date of receipt of application (Annex C).
  - 6.1.4.1 If the application contains CBI, continue with Annex J.
  - 6.1.4.2 If the application is complete, NSC will give a deposit date to the application and continue with activity 6.3
  - 6.1.4.3 If the application is not complete continue with activity 6.2

### **6.2 Request for additional information**

- 6.2.1 The secretariat of NSC will request for additional information required to complete the application procedure. (Annex D)
- 6.2.2 The applicant will submit the additional information required within the timeline established in the notification.

### **6.3 Technical examination**

6.3.1 During the technical examination the NVRRC of NSC through an officially designated institution will verify whether the new variety fulfils the DUS and VCU examinations, following the national testing protocols for DUS/VCU (Annex E)

6.3.2 The NVRRC will prepare a technical report (Annex F) based on data from a minimum of two growing cycles.

6.3.2.1 If the technical examination is not satisfactory, continue with activity 6.4

6.3.2.2 If the technical examination is satisfactory, continue with activity 6.5

### **6.4 Rejection notification**

6.4.1 The NSC will notify applicant of the rejection (Annex G) based on the results of a minimum of two growing cycles.

6.4.2 The applicant may appeal using the appeal procedure (Annex P) within twenty (20) working days from date of notification of rejection

6.4.3 If applicant does not appeal within the stipulated period stated above in sub-activity 6.4.2 the application stays rejected.

### **6.5 Recommendation and registration**

6.5.1 Based on the reports of the evaluation, the NVRRC will recommend to the NSC to register the new variety in the national catalogue of species and varieties of cultivated crops.

6.5.2 The NSC will notify the applicant of the approval of the new variety for registration within 21 working days of approval. (Annex H).

6.5.3 The NSC will publish the registration in an official bulletin based on information established in Annex I.

6.5.4 The NSC shall organize at least one briefing annually to publicize newly registered materials

### **6.6 Information to be provided to UEMOA (Sub-Regional Authority)**

6.6.1 The NSC will provide the sub-regional authority with an updated national catalogue every month, if new varieties are registered.

6.6.2 The variety information included in the catalogue will follow Annex J.

6.6.3 The sub-regional authority will publish annually a common updated catalogue of species and cultivated crops that include a compilation of all national catalogues of the member states.

**7. Records to be kept by the NSC Secretariat**

7.1 Records of application received by NSC.

7.2 Records of correspondence to applicant for additional information

7.3 Records of technical report

7.4 Records of rejection information

7.5 Records of national updated catalogue

7.6 Records of updated sub-regional reports



5.5 molecular identification information if available \_\_\_\_\_

Table 1: Record of candidate variety (ies)/specie (ies)

Name	Existing		Under examination		Not yet examined
	Entry N <sup>o</sup>	Protected N <sup>o</sup>	Entry N <sup>o</sup>	Protected N <sup>o</sup>	

\*\* delete as appropriate

<sup>1</sup> A closed method may not be disclosed

6. Agro-ecological zone (s) recommended by the breeder<sup>2</sup> \_\_\_\_\_

7. Did you use an existing variety (ies) in developing the proposed variety (ies)?

Yes ( ) No ( )

7.1 If yes complete the table 2 below

**Table 2: Information on variety (ies) used in the development of the variety**

Name of such varieties	Entry No	Breeders

8. Are those varieties protected? Yes or no \*\* if yes, attach the written authorization of the breeder(s)/institution

9. Registration in another country

9.1 Is the variety already registered in another national catalogue? Yes ( ) No ( )

If yes, complete the following:

Country	Date	Names and References
1 .....	.....	.....
2 .....	.....	.....
3 .....	.....	.....

9.2 Has an application been made for registration of the variety in a catalogue?

Yes ( ) No ( ) \*\*

<sup>2</sup> zone for testing

	<b>Country</b>	<b>Date</b>	<b>Denominations and References</b>
1	.....	.....	.....
2	.....	.....	.....
3	.....	.....	.....

11. Maintenance of the variety

11.1 Name of person responsible \* \_\_\_\_\_

11.2 Location \_\_\_\_\_

11.3 Method \_\_\_\_\_

12. I certify that all the information is correct and does not, to my knowledge, exclude any information likely to have any adverse impact on the outcome of the examination of the application. I promise to inform the NSC immediately of any change concerning the applicant or breeder, and of any decision taken on the variety by an official agency of another country, as soon as I am notified.

13. I authorize the NSC to proceed with any necessary exchange of technical information and consultation on the denomination with the official agencies of foreign countries.

14. I accept to pay a non-refundable registration fees relating to this application noting that non-payment of filing fees defers further action on my application.

15. I understand that I have the option to withdraw my application for registration of my variety

Done at ..... on.....

Signature of Applicant





### ANNEX C: VERIFICATION REPORT FORMAT

Applicant name:			
Applicant address:			
Date of receipt of application			
File number:		Receipt number:	
Botanical Name:	Common Name:	Proposed variety name:	
		<b>Yes</b>	<b>No</b>
Is the proposed variety name unique in country?			
Seed reference sample submitted?			
Genetic origin of new variety provided?			
Application form duly completed?			
DUS report submitted?			
New variety compared with widely grown check variety (ies)?			
Appropriate denomination?			
VCU report submitted?			
Is material a GMO variety?			
Results of at least three trials; two growing cycles before the application submitted?			
Ranking of the variety in maturity group done?			
Other remarks:			
Is application complete and acceptable for variety registration?			

Date of evaluation: .....

Name and signature of NSC Designated Official:

**ANNEX D: FORMAT FOR REQUESTING ADDITIONAL INFORMATION**

To: APPLICANT

Address

Reference: Application N<sup>o</sup>..... for Variety Registration

Crop and Variety Name

After review of your application N<sup>o</sup>..... requesting the registration of your in the national catalogue, be notified that the following information has to be provided to this office.....

.....  
.....  
.....

Kindly submit the above information in the next twenty (20) working days, so that we can complete the preliminary revision, otherwise the application will be considered invalid.

Chairman, National Seed Council

## **ANNEX E: NATIONAL TESTING PROTOCOLS FOR DUS AND VCU**

**Protocols have been developed for DUS and VCU testing for the following crops:**

- **Cassava**
- **Yam**
- **Maize**
- **Cowpea**
- **Rice**
- **Sorghum**
- **Groundnut**
- **Sweetpotato**

• **PROTOCOLS FOR CASSAVA DUS TEST**

1 species: <i>Manihot esculenta</i> Crantz	
2. Applicant (name and address)	
3. Proposed name of the variety	
4 Information on origin, maintenance and reproduction of the variety	
4.1	Selection scheme
4.2	Mode of multiplication
4.3	Type of material
	a-strain
	b-hybrid
	c-others, e.g GMO
5 Characteristics of the variety	
5.1 Plant form	Open Compact Closed
5.2 Growth habit of young plant	Straight zigzag
5.3 Initial vigour	High Intermediate Low
<b>5.4 Leaf</b>	
5.4.1 canopy shape	Compact Open Umbrella shape Cylindrical Erect
5.4.2 Colour of unexpanded apical leaf:	light green Dark green Greenish- purple Purple

5.4.3 Colour of fully expanded leaf:	Light green Dark green Greenish-purple Purple
5.4.4 Leaf: (prominence of the leaf scar/insertion point)	Prominent Not prominent
5.4.5 Leaf (shape of the central lobe)	Linear Elliptic Panderer Lanceolate Combination
5.4.6 Leaf (pubescence of young leaves)	Absent Weak Moderate High
5.4.7 Leaf Petiole colour	Purple Cream Reddish Green
5.4.8 Leaf Petiole length	short ( $\leq 20$ cm) Medium ( $< 20$ cm) Tall ( $> 25$ cm)
<b>5.5 Stem</b>	
5.5.1 Number of levels of branching	None One Two Three
5.5.2 Branching habit	Compact Open Parasol Cylindrical Unbranching
5.5.3 Stem colour	Light green Green Deep green Grey

5.5.4 Branching height	Low Medium High
5.5.5 Height of matured plant	Short ( $\geq 150\text{cm}$ ) Medium (155-250cm) Tall ( $>250\text{cm}$ )
<b>5.6 Storage root</b>	
5.6.1 Colour of outer skin	White/cream Yellow Pink Purple
5.6.2 Colour of inner skin	White/cream Yellow Pink /red Purple Grey
5.6.3 Colour of pulp	White/cream Yellow
5.6.4 Cyanide content	Low ( $<0.5\text{mmol/kg}$ ) Medium (0.5-1.3mmol/kg) High ( $>1.3\text{mmol/kg}$ )
5.6.5 Consistency of pulp	Watery Soft Hard
5.6.6 Root constriction	Absent Present
5.6.7 Root shape	Conical Conical cylindrical Cylindrical Spindle-shape Irregular Others (specify)
5.6.8 Root neck	Absent

5.6.9 Root position	Present Prominent	Vertical Horizontal Irregular	
5.6.10 Root fibre content	Low Medium High		
5.6.11 Texture of the root	Smooth Medium Rough		
5.6.12 Root diameter	Narrow Medium Wide		
5.6.13 Ease removal of skin (peeling)	Easy Slightly difficult Difficult		
6. Similar varieties and differences from these varieties			
Name of similar variety (ies)	Characteristics that are different in the similar variety (ies)	State of expression of similar variety (ies)	State of expression of candidate variety (ies)
7	Additional information which may help to distinguish the variety		
7.1	Resistance to pests and diseases		
7.2	Special conditions for the examination of the variety		
7.3	Other information		

## **Materials required for Testing DUS & VCU**

The NSC will decide when, where and in what quantity and quality the planting material required for testing the variety is to be delivered. Applicants submitting material from a state other than that in which the testing takes place must make sure that all customs formalities are complied with. The minimum quantity of plant material (seed) to be supplied by the applicant in one or several samples should be a minimum of 120 stem cuttings of at least **3 nodes each**).

The planting material should at least meet the minimum requirements for sprouting. The planting material must be treated unless the competent authorities allow or request such treatment not to be done. If it has not been treated, reasons must be given.

## **Conduct of Tests**

1. The minimum duration of tests should normally be two crop cycle.
2. The tests should normally be conducted at one place. If any important characteristics of the variety cannot be expressed at that place, the variety may be tested at an additional appropriate agro-ecology.
3. The field tests should be carried out under conditions ensuring normal growth. The size of the plots should be such that plants or parts of plants may be removed for measurement and counting without prejudice to the observations which must be made up to the end of the growing period. Each test should include about 120 stem cuttings which should be planted for three or more replicates. Separate plots for observation and measurement can only be used if they have been subjected to similar environmental conditions.
4. Additional tests for special purposes may be established.

## **Methods and observations**

1. Appropriate characteristics should be used for the testing of distinctness of varieties.
2. Unless otherwise indicated, all observations for the assessment of distinctness and stability should be made on 12 plants or parts taken from each of the 12 plants.
3. For the assessment of uniformity, population standard deviation of 1 per cent with an acceptance probability of at least 95 per cent should be applied. In the case of a sample size of 60 plants, the maximum number of off-types allowed would be 2.
4. Unless otherwise indicated, all observations on the leaf and on the stem should be made where leaves are fully expanded.



## **Grouping of Varieties**

1. The collection of varieties to be grown should be divided into groups to facilitate the assessment of distinctness. Characteristics which are suitable for grouping purposes are those which are known from experience not to vary, or vary only slightly, within a variety. Their various states of expression should be fairly evenly distributed throughout the collection.

## TABLE OF CHARACTERISTICS

### Reporting

Report of DUS test for National Variety Catalogue

Application number: .....

Variety name: .....

Species: .....

Applicant: .....

Reporting Institution: .....

Period (Year/Season of evaluation): .....

Additional Climatic information: .....

Trial sites:

The variety has been evaluated and the result of the DUS evaluation is:

	Y	N
The variety conforms to the Distinctness requirement	[ ]	[ ]
The variety conforms to the Uniformity requirement	[ ]	[ ]
The variety conforms to the Stability requirement	[ ]	[ ]

Recommendation:

The variety does/does not conform to the DUS requirements.

Signed: ..... Date: .....

## CASSAVA VCU

### **Purpose**

Study of the agricultural performances of Cassava varieties (production, reaction towards diseases, climatic conditions, precocity, etc.) proposed for registration in the National Catalogue of Varieties

### References

- Seed Technical Committee Reports,
- New varieties under study and
- Varieties on post-registration

### **Setting –up**

Experiment conducted by .....

### **Methodology** (Standard for Ghana)

#### **Experimental Design**

RCBD with 4 replications

**Plot area:** (minimum: 6 lines with 5 cuttings/line by 4 replications).

- Land preparation;
- Planting date in the ecological zone;
- Fertilization;
- Field maintenance;
- Crop Duration; (about 12 months after planting)
- Sampling.

#### **Observation – Ratings**

- Rate of sprouting (1 month after planting); discard if less than 90%
- Incidence of diseases (Mosaic, Anthracnose, Cassava Bacterial Blight) on primary leaves (1 month after planting);
- Damages caused by pests (grasshoppers, mites, mealybugs, rodents (e.g. grasscutters);
- Yield at harvest (12 months after planting);
- Qualities: (phenotypic, cooking and organoleptic, etc.).

## YAM (DUS)

### 1. **Subject of this testing protocol**

- 1.1 This testing protocol can be applied to all the varieties of *Dioscorea spp.* L. and related wild species.

### 2. **Materials Required**

The relevant authorities will decide on dispatching dates and places. It is up to the applicant who submits the material from another country for testing to ensure that all customs formalities are fulfilled and phytosanitary requirements respected.

- 2.2 The material should be provided in the form of underground tubers or bulbils.

The minimum quantity of plant material to be provided by the applicant should be enough to plant 100 stands per location, and each tuber or bulbil should weigh not less than 0.2kg

- 2.3 The plant material should be clean and healthy – free from diseases and/or pests.

- 2.4 The plant material should not be subjected to any treatment that is likely to have an influence on the expression of the characteristics of the variety except a formal authorization or request from the relevant authorities has been sought. If it has undergone any treatment, the treatment applied should be explained in detail, with all relevant documents provided.

### 3 **Testing method**

#### 3.1 Testing duration

The minimal testing duration should be two cycles of independent vegetative periods (seasons).

#### 3.2 Testing place

Testing should be carried out in at least one location per proposed ecological zone.

#### 3.3 Conditions relating to testing

Testing must be carried out with the requisite husbandry practices.

#### 3.4 Testing design

Testing must be designed so as to enable sampling of plants or parts of plants for measurements or counting without hampering subsequent observations that should be carried out till the end of the vegetative period.

3.4.1 Each testing must be made on at least 40 plants to cover two or more replications. Separated plots can only be used as follows; one plot for observations and the other one for measurements, if such plots are under similar environmental conditions. Varieties multiplied through tissue culture must, be compared with plant material of comparable varieties, multiplied and tilled under the same conditions.

3.5 Number of plants or parts of plants to be tested

20 plants must be tagged and all observations should be made on those tagged plants.

3.6 Additional testing

Further testing can be made for the observation of relevant characteristics

## **4. Distinctness, Uniformity and Stability Testing (DUS)**

### **4.1 Distinctness**

#### 4.1.1 General Recommendations

It is important for the users of this testing protocol to pay due attention to the following items.

#### 4.1.2 Reproducible Differences

All the differences possibly observed in a character should be reproducible in a growing cycle.

#### 4.1.3 Clear Differences

The clearness of difference between two varieties depends on numerous factors, notably the type of expression of the desired character, depending on whether the character is qualitative, quantitative or pseudo-qualitative. It is therefore important that the users of this testing protocol become acquainted with the recommendations contained in the general introduction before taking any decision as regards distinctness.

### **4.2 Uniformity**

It is mainly important for the users of this testing protocol to read the general introduction before taking any decision relating to uniformity. However, it is advisable to pay due attention to the following points:

For uniformity assessment, a population standard deviation of 1% and an acceptance probability of at least 95% should be applied. For a sample of 20 plants, one off-type plant is accepted.

### **4.3 Stability**

4.3.1 It is usually uncommon to conduct tests on stability. In practice, once a variety is found to be uniform and distinct, it can also be considered as stable.

4.3.2 If required or in case of doubt, stability can be tested either by cultivating an additional generation, or by testing a new seed or a new plant material so as to check whether it presents the same characteristics as the material previously provided.

## **5 Grouping of varieties and organization of crop testing**

5.1 To select well known varieties to be cultivated during testing with the candidate variety and to decide how to divide such varieties in groups so as to facilitate distinction, it is useful to use grouping characteristics.

5.2 Grouping characteristics are those, whose levels of expression when observed, even on different settings, can be used, either separately, or with other characteristics pertaining to the same kind to, (a) select well known varieties likely to be excluded from crop testing carried out for distinction experiment and (b) organize crop testing so as to regroup similar varieties.

5.3 The following are some of the useful characteristics for grouping yam varieties: (twining direction, tuber shape etc)

## **6. Introduction to the table of characteristics**

### **6.1 Categories of characteristics**

#### **6.1.1 Standard characteristics appearing in the testing protocol**

Standard characteristics appearing on the testing protocol are those recognized by UPOV for DUS testing and among which the members of the union can choose those meeting their specific needs.

#### **6.1.2 Characteristics with asterisks**

Characteristics with asterisks (\*) are mandatory to be tested for under this protocol.

### **6.2 Expression levels and corresponding codes**

Expression levels are indicated for each character to define and harmonize descriptions.

### **6.3 Types of expression**

An explanation on character expression types (pseudo-qualitative, quantitative and qualitative character) is given in the general introduction.

#### 6.4 Photographs of varieties shown as examples

If necessary, photographs of varieties may be provided as examples so as to better define the expression levels of the character.

#### Legend

- (\*) characteristic with asterisk-see section 6.1.2
- (QL) qualitative characteristic-see section 6.3
- (QN) quantitative characteristic-see section 6.3
- (PQ) pseudo-qualitative characteristic-see section 6.3

## YAM (DUS)\*

	Date of application: (for office use)
<b>TECHNICAL QUESTIONNAIRE</b> To fill in with a registration application in the national catalogue	
<p>1. Subject of the technical questionnaire</p> <p>1.1 Botanical name: <i>Dioscorea spp.</i> and related species</p> <p>1.2 Common name: Yam</p> <p>1.3 Proposed name:</p> <p>2. Variety selection</p> <p>2.1 Selection procedure (provide diagram if applicable)</p> <p>2.2 The variety mode of multiplication</p> <p>2.2.1. Type of material</p> <p style="margin-left: 20px;">A) Species/strains</p> <p style="margin-left: 40px;">Fertile male species/strains [     ]</p> <p style="margin-left: 40px;">Sterile male species/strains [     ]</p> <p style="margin-left: 20px;">B) Hybrid</p> <p style="margin-left: 20px;">C) Others (specify)</p> <p>Regarding hybrid varieties, the production diagram and, for each component, information, under sessions 3 to 5, should be provided on a separate sheet.</p> <p>Simple hybrid (SH)</p> <p>(Female parent ....) X (...Male parent ....)</p> <p>N.B. If you use sterile male, please indicate the name of the one who maintains the species/strains of the female parent</p> <p>2.3 Other information</p>	
<p>3. Characteristics of the variety to be indicated: (the figure between parentheses refers to the corresponding characteristics in the testing protocol; please indicate the suitable note).</p>	
<b>Characters</b>	<b>Codes</b>



3.1	Young stem : colour of the stem	
	Green	1
	Purplish green	2
	Brownish green	3
	Dark brown	4
	Purple	5
3.2	Young stem: wings on stem	
	Present	1
	Absent	0
3.3	Young stem: spineniness	
*	Present	1
	Absent	0
3.4	Young stem: coloured marks at the base of the thorns	
	Present	1
	Absent	0
3.5	Fully grown stem : type of hair	
	Star- like	1
	T shaped	2
	Simple	3
	Other (specify)	4
3.6	Fully grown stem: position of the scales	
	Alternate	1
	Opposite	2
	Alternate or opposite	3
	Verticillate	4
3.7	Plant: form of thorns	
	Straight	1
	Curved upwards	2
	Curved downwards	3
3.8	Plant : coalescent thorns	
*	Present	1
	Absent	0
3.9	Leaf : colour	
*	Yellowish	1
	Pale green	2
	Dark green	3
	Purplish green	4

	Purple	5
	Other (specify)	6
3.10	Leaf : texture	
	Supple	1
	Tough	2
3.11	Leaf : form	
	Oval	1
	Heart-shaped	2
	Lengthened heart-shaped	3
	Widened heart-shaped	4
	Lengthened sagittate	5
	Widened sagittate	6
	Hastate	7
	Other (specify)	8
3.12	Leaf: form of the apex	
	Obtuse	1
	Sharp	2
	Emarginate	3
	Other (specify)	4
3.13	Leaf: distance between the lobes	
*		
	Low	3
	Medium	5
	Wide	7
3.14	Flowers: type of inflorescence	
	Simple spike	1
	Raceme	2
	Panicle	3
	Other (be precise)	4
3.15	Fruit: form of fruits	
	As long as wide	1
	Lengthened	2
	Trilobate capsules	3
3.16	Fruit: structure of the wing of the seed	
	Wing surrounding the embryo	1
	Wing on both sides of the embryo	2
	Wing on one side of the embryo	3
3.17	Fruit : number of embryo seeds	
	Small	3

	Average	5	
	High	7	
3.18	Bulbil : colour of the pulp		
	White	1	
	Yellowish white or off-white	2	
	Yellow	3	
	Orange	4	
	Light purple	5	
	Purple	6	
	Purple with white	7	
	White with purple	8	
	Purple outside / yellowish inside	9	
	Other (specify)	10	
3.19	Underground tubers : crown type (if possible provide diagrams)		
	Regular	1	
	Lengthened	2	
	Ramified	3	
3.20	Underground tuber: runner		
	Absent	0	
	Present	1	
3.21	Underground tubers : spineniness of roots		
	Poor	3	
	Average	5	
	Strong	7	
4.	Closely related varieties and difference with respect to such varieties		
	Please indicate on the table below how your candidate variety is different from closely related variety (ies) which to the best of your knowledge is/ are more similar to it. This information can facilitate distinctness determination by the testing institution.		
Characteristics of closely-related variety/(ies)	Characteristic(s) according to which your candidate variety is different from closely- related varieties	Describe the expression of characteristic(s) with closely -related variety/(ies)	Describe the expression of characteristic(s) with your candidate variety
Example			
5	Further information that could facilitate variety testing		
5.1	Besides the information provided in sections 5 and 6, are there additional characteristics that could facilitate the assessment of the variety distinctness?		
	Yes	[     ]	No     [     ]

(if the answer is yes, please specify )

5.2 Specific requirements for variety testing

5.2.1 Are specific requirements needed for growing or testing the variety?

Yes [ ] No [ ]

5.2.2 If the answer is yes, please specify it:

5.3 Other information

A colour photograph must be attached to this questionnaire.

6. Dissemination Authorization

A) Does the legislation regarding environment conservation, as well as man and animal health, require a preliminary dissemination authorization of the variety?

Yes [ ] no [ ]

B) If the answer is yes, did you get such authorization?

Yes [ ] no [ ]

If the answer is yes please attach a copy of the authorization.

7. Information on plant material to be [tested] / [to provide for the purposes of the testing]

7.1 The expression of one or many characteristic(s) by one variety can be influenced by various factors, such as pests and diseases, chemical treatment (for instance growth retarding or pesticides), tissue culture, different stocks, scions taken at the different growth stages of a plant etc.

7.2 The section 2 of the testing material (“required material”) specify that the plant material should not have undergone a treatment likely to have an influence on the variety characteristic expression except on authorization or a formal request from the relevant authorities. It is added that if the plant material has been treated, the treatment should be explained in detail. As a result, please do indicate below if to the best of your knowledge the plant material was subjected to the following factors :

A) Disease causing organisms (e.g. virus, bacteria, phytoplasma, fungi) yes [ ] no [ ]

B) Chemical treatment (e.g. growth retardants Or pesticides)

yes [ ] no [ ]

C) Tissue culture

yes [ ] no [ ]

D) Other factors

yes [ ] no [ ]

If you answer yes to any of the above, please specify.

.....

## YAM VCU

### **Purpose**

Study of the agricultural performances of yam clones (production, pest and diseases tolerance, climatic conditions, maturity period, etc.) proposed for registration in the national catalogue.

### References

- Seed Technical Committee report
- New variety under study and
- Varieties on post-registration

### **Testing Institution:**

### **Testing Period:**

**Husbandry Practices** (Uniform standard for the country)

**Experimental Design:** Usually, RCBD is used with a minimum of three replications

- land Preparation and planting of seed yam;
- Maintenance of plots;
- Date of sowing;
- Date of harvest
- Harvesting regime – single or double
- Technical sampling when requested.

### **Observations**

- *On the field*

- Flowering and sex of flowers;
- uniformity of above ground parts;
- Diseases and Pests (incidence and severity);
- Number of marketable tubers
- Number of unmarketable tubers
- Number of tubers per plant
- Weight of tubers by plant
- Yield

- *In storage*

- Number and weight of tubers in storage
- Number and weight of healthy tubers every month for six months
- Health status of stored tubers

**Qualities:** (technological, i.e. starch, water, sugar, etc., culinary properties e.g. taste, texture, aroma etc.)

## MAIZE (DUS) \*

1. Species: *Zea mays* L.

2.	Applicant (name and address)		
3.	Proposed name		
4.	Information on origin, maintenance and reproduction of the variety		
4.1	Method of breeding		
	Single cross hybrid Three-way cross hybrid Double-cross hybrid Open-pollinated variety Other (specify)		
	<i>e.g. Synthetic, Top cross</i>		
4.2	Other information		
5.	Characteristics of the variety to be given		
5.1	Characteristics marked with “*” are mandatory		
5.2	For three-way cross hybrids, double cross hybrids and OPVs indicate the degree of variations if any		
6.	Similar varieties and differences from these varieties		
	Names of similar variety (ies)	Characteristics in which the similar variety are different	State of expression of similar variety (ies)      State of expression of candidate variety
7	Additional information which may help to distinguish the variety		
8	Resistance to pests and diseases		
9	Special conditions for testing of the variety		
10	Other information		



## **Materials required**

- The minimum quantity of seed to be supplied by the applicant for each variety should be 1 kg.
- The seed should at least meet the minimum requirements for germination capacity (85-90%, moisture content (11.0-13.0%) and purity (98-99%) for marketing certified seed in Ghana.
- The plant material must not have undergone any treatment unless the competent authorities allow or request such treatment. If it has been treated, full details of the treatment must be given.

## **Conduct of tests**

1. The minimum duration of tests should normally be two growing cycle.
2. The tests should be conducted in at least one location in each agro-ecology the variety is proposed for.
3. The field tests should be carried out under optimum conditions (soil, moisture, temperature, humidity, plant density, fertilizer, weed control etc. The size of the plots should be such that plants or parts of plants may be removed for measurement and counting without prejudice to the observations which must be made up to the end of the growing period. As a minimum, each test plots at each testing place per growing cycle should include:
  - 60 plants for single-cross hybrids
  - 80 plants for other hybrids and open-pollinated varieties
  - In each testing place, there must be a minimum of three replicates. Separate plots for observation and for measuring can only be used if they have been subjected to similar environmental conditions.

## **Methods and observations**

1. The characteristics described in Table 1 should be used for the testing of distinctness of varieties.
2. All observations for the assessment of distinctness and uniformity should be made on at least 40 plants or parts of plants.
3. All observations on the ear should be made on the upper well-developed ear.
4. For the assessment of uniformity of single-cross hybrids a population standard deviation of 3 per cent with an acceptance probability of 95 per cent should be applied. In the case of a sample of 40 plants, the maximum number of off-types allowed would be 3. For three-way cross hybrids, double-cross hybrids and open pollinated varieties, the variability within the variety should not exceed the variability of comparable varieties already known.

5. In open pollinated varieties, three-way cross hybrids and double-cross hybrids, characteristics may segregate with the effect that several states of expression occur side by side in a variety. Certain characteristics which from experience are known to give rise to such segregations in open pollinated varieties, three-way cross hybrids and double-cross hybrids are identified with an "S."

### **Grouping of varieties**

1. The collection of varieties to be grown should be divided into groups to facilitate the assessment of distinctness. Characteristics which are suitable for grouping purposes are those which are known from experience not to vary, or to vary only slightly, within a variety. Their various states of expression should be fairly evenly distributed throughout the collection.
2. It is recommended that the competent authorities use the following characteristics for grouping varieties:
  - I. Tassel: time of anthesis (characteristic 7)
  - II. Ear: anthocyanin coloration of silks (characteristic 16)
  - III. Plant: height (characteristic 22)
  - IV. Ear: type of grain (characteristic 30)
  - V. Ear: anthocyanin coloration of glumes of cob (characteristic 33)

### **Characteristics and symbols**

- (\*) Characteristics that should be used on all varieties in every growing period over which examinations are made and always be included in the variety descriptions, except when the state of expression of a preceding characteristic or regional environmental conditions render this impossible.

**Table 2: CHARACTERISTICS**

1-first leaf: anthocyanin coloration of sheath	Absent Present
If present see photo in Appendix 1 for level of intensity	
2-first leaf: shape of tip	Pointed Pointed to round Round Round to spatulate Spatulate
3-leaf: angle between blade and stem (on leaf just above upper ear) - Refer Appendix 2	Very small Small Large Very large
4-leaf: inclination of blade	Straight Re-curved Strongly re-curved
5-stem: degree of zigzagging	Absent Slight Strong
“S” 6-stem: anthocyanin coloration of brace roots	Absent Weak Strong
*7-tassel: time of anthesis (on the middle third of main axis, 50% of plants)	Very early (37- 40 DAP) Early (41-45 DAP) Medium (46-51 DAP) Late (51DAP)
8-tassel: anthocyanin coloration at base of flower (in middle third of main axis)	Absent Weak Strong
“S” 9-tassel: anthocyanin coloration of flowers excluding base	Absent Weak Strong
“S” 10-tassel: anthocyanin coloration of anthers	Absent Weak Strong
11-tassel: density of spikelets	Lax Medium Dense
*12-tassel: angle between main axis and lateral branches (in lower third of tassel)	Small Medium Large

“S” *13-tassel: inclination of lateral branches	Straight Slightly curved Curved
*14-tassel: number of primary lateral branches	Few Medium Many
15-ear: time of silk emergence (50% of plants)	Very early (40-44) Early (45-50) Medium (51-55) Late (above 56)
“S” *16-ear: anthocyanin coloration of silks (refer appendix 3)	Absent Present
“S” *17-ear: intensity of anthocyanin coloration of silks (ref. Appendix 3)	Very weak Weak Medium Strong Very strong
“S” 18-leaf: anthocyanin coloration of sheath (in middle of plant)	Absent Present
19-tassel: length of main axis above lowest side branch	Short Medium Long
*20-tassel: length of main axis above upper side branch	Short Medium Long
21-tassel: length of side branches	Short Medium Long
*22-plant: height (tassel included)	Short Medium Tall
23-plant: ratio height of insertion of upper ear to plant height ratio	Small Medium Large
24-leaf: width of blade (leaf of upper ear)	Narrow Medium Wide
25-ear: length of peduncle	Short Medium Long
*26-ear: cob length (without husk)	Short Medium Long
27-ear: cob diameter (in middle)	Small

	Medium Large
28-ear: cob shape	Conical Conic-cylindrical Cylindrical
29-ear: rows of grain	Few Medium Many
“S” *30-ear: type of grain (in middle third of ear)	Flint Dent Sweet Pop
“S” *31-ear: colour of top grain	White Yellowish white Yellow Orange Red Blue black
“S” 32-ear: colour of dorsal side of grain	White Yellowish white Yellow Orange Red Blue black
*33-ear: anthocyanin coloration of glumes of cob	Absent Present
“S” 34-ear: intensity of anthocyanin coloration of glumes of cob	Weak Medium Strong

\* UPOV guidelines for the conduct of tests for distinctness, uniformity and stability.

## Reporting

Report of DUS test for variety catalogue

Application number: .....

Variety name: .....

Species: .....

Applicant: .....

Reporting Institution: .....

Year and season of evaluation: .....

Trial sites:

The variety has been evaluated and the result of the DUS evaluation is:

	Y	N
The variety conforms to distinctness requirement	[    ]	[    ]
The variety conforms to uniformity requirement	[    ]	[    ]
The variety conforms to stability requirement	[    ]	[    ]

Recommendation

The variety does/does not conform to the DUS requirements.

Signed: ..... Date: .....

## MAIZE: VCU

### Introduction

The agronomic and technical value test enables the selection of new hybrids and OPVs that are superior enough to existing varieties. This is determined based on evaluations conducted of the proposed variety and other existing popular varieties in the various agro-ecological zones of Ghana.

### Purpose

Study of the agricultural performances of Maize varieties (production, reaction towards diseases, climatic conditions, precocity, etc.) proposed for registration in the National Catalogue of Varieties

### References:

- Seed Technical Committee,
- New varieties on study and
- Varieties on post-registration

### Setting –up

Experiment conducted by .....

**Methodology** (Standard for Ghana)

### Experimental Design

Usually, RCBD is used with a minimum of three replications

- Land preparation;
- Planting date in the ecological zone
- Fertilization;
- Field maintenance;
- Crop Duration; (up to 4 months after planting)
- Sampling

### Plot area:

- 4 rows measuring 5 meters with the harvest of the 2 central rows;

**Table 1: Recommended plant spacing used in Ghana**

<b>Maturity Group</b>	<b>Within (Intra) Row Spacing (cm)</b>	<b>Between (Inter)Row spacing (cm)</b>	<b>Plant Density per ha.*</b>	<b>No. of plants in a row of 5m</b>
Extra-Early	40	75	76,000	26
Early	40	75	76,000	26
Intermediate (Medium)	45	80	55,000	24
Late	50	90	44,000	22

\* Two plants per hill used for calculation

### **Observation – Ratings**

- avoid the use of actual identification names of the proposed varieties. Use coding instead
- Plant stand at 14 days after planting
- Days to 50% flowering
- Tassel initiation
- Plant and ear heights
- Disease rating (rust, maize streak virus, leaf blight)
- Pest (striga, stemborers, leafhoppers etc)
- lodging (stem and root)
- Plants at harvest
- Ears harvested
- For other set of parameters refer to Appendix 4

Postharvest qualities (organoleptic)

Statistical Analysis

Relevant statistics must be included in the final data

## **ANNEX F: TECHNICAL REPORTING FORMAT**



1. Reference number of NSC : .....
2. Reporting Institution : .....
3. Breeder's reference : .....
4. Date of application : .....
5. Applicant : .....
6. Agent : .....
7. Botanical name of crop : .....
8. Common name of crop : .....
9. Variety name : .....
10. Breeder (if different from applicant) : .....
11. Testing station(s) and place (s) : .....
12. Season(s) tested : .....
13. Date and place of issue of report : .....

14. Results of the DUS Examination and Conclusion

(a) Report on Distinctness

The variety

- is clearly distinguishable from any other variety [     ]
- is not sufficiently distinguishable from all varieties [     ]

whose existence is known to us.

(b) Report on Uniformity

The variety

- is sufficiently uniform [     ]
- is not sufficiently uniform [     ]

with regards to the particular features of its sexual reproduction and phenotypic characteristics.

(c) Report on Stability

The variety

- is stable [     ]
- is not stable [     ]

in its essential characteristics.

15. Remarks: .....

.....

16. Signature:

.....

Designation

**ANNEX G: FORMAT OF NON-APPROVAL NOTIFICATION MEMO**

To: APPLICANT

From:

Date:

Application N<sup>o</sup>:

Reference: Application N<sup>o</sup>. .....for registration of Variety

Crop and Variety Name:

You are hereby informed that your application no. ....for registration of a variety in the National Catalogue has not been approved as per the attached verification report.

You may appeal against this decision in accordance with the regulations and appeal procedure.

Chairman, National Seed Council

**ANNEX H: FORMAT FOR APPROVAL NOTIFICATION FORMAT**

To: APPLICANT

From:

Date:

Application N°:

Reference: Application N°:

Crop and Variety Name:

I wish to inform you that the application for your new variety registration in the National Catalogue has been approved. Your variety ..... (Name) will be listed in the catalogue on ..... with a reference number .....  
Please see attached report.

Accept my congratulations.

Chairman, National Seed Council

## **ANNEX I: PUBLISHING VARIETY INFORMATION IN AN OFFICIAL BULLETIN**

1. Application for registration
2. Application for variety denomination
3. Withdrawal of the application for registration
4. Registrations
5. Rejection of the application for registration
6. Modification of the persons (applicants, plant breeders and representatives)
7. Removals
8. Official reports

**ANNEX J: CONFIDENTIAL BUSINESS INFORMATION  
HANDLING PROCEDURES**

**NATIONAL SEED COUNCIL (NSC)**

Authorization Date .....

Effective Date .....

Created by .....

Approved by .....

## **1. Purpose**

- 1.1 The purpose of this procedure is to define the sequence of events, interfaces and responsibilities involved in the procedure of handling CBI for variety registration into the National Catalogue.

## **2. Scope**

- 2.1 From receipt of application for variety release and registration containing CBI to through secure handling to storage of CBI documents.

## **3. References**

- 3.1 National Regulations on the Protection of CBI.

- 3.2 List of authorized experts to receive CBI.

- 3.3 Regional Guidelines for CBI

## **4. Responsibility and Authority**

- 4.1 The NSC is responsible for receiving the CBI and implementing a secured document tracking and storage systems.

- 4.2 The NSC is responsible for accepting and evaluating the applicant's claims for CBI.

- 4.3 The NSC is responsible for storing and safe handling CBI documents and designating who may have access to CBI

- 4.4 Persons with access to CBI are individually responsible for securing any CBI documents during a revision and for maintaining its confidentiality.

## **5 Activities**

### **5.1 Receipt and evaluation of CBI**

- 5.1.1 The NSC will receive an application containing information the applicant claims to be CBI.

- 5.1.2 The NSC will assess applicant's justification for claiming CBI.

- 5.1.2.1 If the NSC does not uphold the applicant's justification continue with activity 6.2

- 5.1.2.2 If the NSC accepts the information claimed as CBI continue with activity 6.3

- 5.1.3 The NSC will record date of receipt and give each CBI document a reference number.

5.1.4 The NSC will identify and train their personnel who will be responsible for handling CBI documents.

## **6. Notification of non-acceptance of CBI**

6.1.1 The NSC will notify the applicant of the non-acceptance of CBI claimed in a maximum of 21 working days from date of receipt of application.

6.1.2 The applicant may appeal against the decision.

## **6.2 Notification of acceptance**

6.2.1 The NSC will notify the applicant the acceptance of the CBI information submitted in a maximum of 14 working days after assessment.

## **6.3 Storage of CBI**

6.3.1 The authorized personnel of the NSC will store the CBI in a secure area when not in use.

## **6.4 Access to CBI**

6.4.1 The NSC will designate and list the technical experts who will be allowed to review the CBI.

6.4.1.1 Authorized personnel of the NSC will only provide CBI documents to technical experts whom the NSC has designated and are listed.

6.4.2 The authorized personnel will record dates technical experts receive and return CBI documents

6.4.2.1 The NSC will take precautions to ensure that unauthorized persons are not present at meetings where CBI documents and CBI are discussed.

6.4.2.2 The technical experts are individually responsible for maintaining confidentiality of the CBI.

6.4.3 The technical experts will prepare their reports without revealing any information deemed CBI.

6.4.3.1 The NSC will train the technical experts on safeguarding CBI before giving authorized status.

6.4.3.2 The NSC will provide restricted working areas for receiving the CBI documents.

## **7 Records**

7.1 Record of receipt of application containing CBI.



7.2 List of authorized technical experts.

7.3 Registry of CBI utilization.

7.4 List of authorized personnel.

7.5 Record of notification to applicant

## **8 Annexes**

8.1 Annex K: Format for Receipt of CBI

8.2 Annex L: CBI Denial Notification Format

8.3 Annex M: Format for notification of CBI Acceptance Claims

8.4 Annex N: Format for the listing of Technical Experts

8.5 Annex O: Format for Registry of CBI Utilization

**ANNEX K: FORMAT FOR CONFIDENTIAL BUSINESS INFORMATION**

<b>APPLICATION No.</b>	<b>DATE OF RECEIPT</b>	<b>TOTAL NUMBER OF PAGES WITH CBI</b>	<b>STAFF NAME</b>	<b>SIGNATURE</b>

**ANNEX L: CBI DENIAL NOTIFICATION FORMAT**

APPLICATION N°:

DATE:

TO: APPLICANT

FROM: NSC

I hereby inform you that your claims for CBI in your variety application file no.....  
has not been accepted based on the following:-----  
-----  
-----  
-----

You may opt to provide further justification for each. Please provide the NSC with amended or corrected pages, which reflect the changes in your CBI status.

You have the right to appeal against the above decision within 21 working days following the established appeal procedure.

Chairman, National Seed Council

**ANNEX M: FORMAT FOR NOTIFICATION OF ACCEPTANCE OF CBI CLAIMS**

APPLICATION N°:

DATE:

TO: APPLICANT

FROM: NSC

I hereby inform you that your claims for CBI contained in application no.....  
requesting variety registration in the National Catalogue have been accepted.

Chairman, National Seed Council





**ANNEX P: APPEAL PROCEDURE**  
**NATIONAL SEED COUNCIL (NSC)**

Authorization Date .....

Effective Date .....

Created by .....

Approved by .....

## **1. Purpose**

- 1.1 The purpose of this procedure is to define the procedures to be followed to appeal against a rejection decision taken by the NSC

## **2. Scope**

- 2.1 From receipt of an applicant's request to appeal to the report of the final decision.

## **3. References**

- 3.1 Crop Requirements for DUS Testing
- 3.2 Crop Requirements for VCU
- 3.3 National and Regional Variety Catalogue Requirements
- 3.4 COAfEV Version December 2006

## **4. Definitions**

- 4.1 COAfEV: West African Catalogue of Plant Species and Varieties; regional catalogue with varieties listed that can be produced and marketed within the territory of the Union.

## **5. Responsibility and Authority**

- 5.1 The NSC is responsible for receiving the appeal, and providing the date to meet with the appellant.
- 5.2 The NSC is responsible for reviewing the technical aspects of the appeal.
- 5.3 The NSC is responsible for taking a final decision and notifying the appellant.
- 5.4 The NSC legal department is responsible for analyzing the final decision prior to publishing a report.

## **6. Activities**

### **6.1 Receipt of appeal**

- 6.1.1 The NSC will receive and record the appeal request within the allowable time limit (60 days after the notification).

### **6.2 Review of appeal**

- 6.2.1 The NSC will review the appeal request and make a preliminary report within 60 days of receipt of the appeal.

### **6.3 Meeting with the appellant**



6.3.1 The NSC will schedule a date for a meeting with the appellant.

6.3.2 The appellant will present the case including new reasons directly or indirectly related with the case.

#### **6.4 Review of Rejection Decision**

6.4.1 After the meeting with the appellant, the NSC will make a decision within the established legal period.

6.4.2 A favorable decision to the appeal may contain conditions that the appellant must consider. The NSC will notify the appellant of the decision within 14 days after the review.

#### **6.5 Review by the Legal Department**

6.5.1 The legal department will review the appeal, the preliminary report, and the NSC decision report and will report its findings and recommendations to the NSC.

#### **6.6 Notification to the appellant**

6.6.1 Based on the legal decision report the NSC will notify the definitive decision to the appellant.

### **7 Records**

7.1 Record of appeal request.

7.2 Preliminary report.

7.3 Meeting report.

7.4 Decision report.

7.5 Report of the Legal Department.

7.6 Notification report.

### **8 Annexes**

8.1 Annex Q: Format for Appeal request

8.2 Annex R: Format for Appeal Meeting

## **ANNEX Q: FORMAT FOR APPEAL REQUEST**

TO: NSC

FROM: APPELLANT

APPLICATION No.:

VARIETY NAME:

DATE:

As per your letter of DD-MM-YY in which you notified me of my rejection of application, I hereby wish to exercise my right to appeal against this decision. In accordance with your procedures, I am filing this appeal within the established time limits and annexing pertinent additional information.

APPELLANT SIGNATURE

**ANNEX R: FORMAT FOR APPEAL MEETING**

TO: APPLICANT AND SSC

FROM: NSC

APPLICATION No.:

VARIETY NAME:

DATE:

I hereby notify you to participate in the appeal meeting that will be held on (DD/MM/YY), in (address), at (time), to carry out the appeal procedures. During this meeting we will discuss the technical aspects presented in the applicant's appeal.

Chairman, National Seed Council

# 1. Anthocyanin coloration of sheaf

- Presence of anthocyanin
  - Light
  - Intense
- Absence of anthocyanin



Absence of anthocyanin



Presence of anthocyanin - intense



Presence of anthocyanin - light

**Appendix 2:**

**2. First leaf: shape of tip**



**2. First Leaf: shape of tip**

- Pointed
- Pointed to round
- Round
- Round to spatulated
- Spatulated



**3. Leaf angle**



Very small



Small



Large



Very large

**Appendix 3:**



16. Ear: Anthocyanin coloration (absent or present);  
17. Intensity (very weak, weak, medium strong, strong)





# Sample data sheet

Location....., Date planted....., Date harvested,..... (attach rainfall data, ect.)

Plot No.	Entry No.	Seed'g count	Days to tassel	Days to silk	Ear ht	Plant ht	Disease score (1-9)			Lodging		Insect damage	Plants harv'ted	No. cobs	Field Wt	Grain MC
							MSV	Rust	B. Maydis	Stem	Root	Stem borer/ foliar				
101																
102																
103																
104																
105																
106																
107																
108																
109																
110																