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COMMITTEE FOR TRADE, INDUSTRY AND ENTERPRISE DEVELOPMENT

Working Party on Standardization of Perishable Produce and Quality Development

Specialized Section on Standardization of Seed Potatoes
Thirty-first session, 12-14 March 2001, Geneva

Item 6 of the Provisional Agenda

QUESTIONNAIRE ON CERTIFICATION SCHEMES

Note by the secretariat

At the meeting of rapporteurs it was agreed that the Secretariat and the Chairman finalize the questionnaire for countries using classification into field generation systems. This document contains the final questionnaire which has been sent out to countries. The Specialized Section will be informed about any preliminary results.

B) QUESTIONNAIRE FOR COUNTRIES USING CLASSIFICATION INTO FIELD GENERATION SYSTEM

Instructions

- In all the Yes/No questions, please underline or circle the appropiate answer.

COUNTRY: _____

1. GENERAL QUESTIONS

Name and address of the national seed potato certification authority or authorities:

_____

_____

_____

1.1 The authority in charge of seed potato certification is:

- Government administration **Yes** **No**
- Service under government responsibility **Yes** **No**
- Other service (please elaborate) _____

_____

Which authority or authorities control seed potato

- Imports: _____
- Exports: _____

1.2 PRODUCTION and TRADE: Please indicate which following types of potato material is produced, imported or exported from your country and indicate whether or not this material is under official control

	Produced		**Under official control**		**Import**		**Under official control**		**Export**		**Under official control**	
	y	n	y	n	y	n	y	n	y	n	y	n
Breeding material												
Mother tubers												
In vitro tissue culture												
Mini-tubers (pre-basic TC)												
Field Generation 1												
Field Generation 2												
Field Generation 3												
Field Generation 4												
Field Generation 5												
Field Generation 6												
Early potatoes												
Ware potatoes												
Transgenic potato												
Varieties(GMO's)												

1.3 Does your country allow potato producers to plant non-certified seed potatoes?

- In the whole country? **Yes** **No**

- In part of the county? **Yes** **No**

1.4 Are imported certified class seed potatoes intended only for ware potato production? **Yes** **No**

If **no**, indicate percentages of use:

- Ware production _____

- Further multiplication _____

2 INFORMATION CONCERNING CERTIFICATION SYSTEM

2.1 Do seed potato producers/growers need to be licenced/ authorized to be eligible for seed potato certification? **Yes** **No**

2.2 Must potato varieties be registered/ catalogued for certification purposes? **Yes** **No**

2.3 What method is used to confirm varietal integrity/identity within the certification program ?

- Documentation/official certificate, etc. **Yes** **No**

- Visual inspection of the crop to a varietal description **Yes** **No**

- DNA fingerprints on protein/ DNA profiling **Yes** **No**

- Field grow out of reference samples **Yes** **No**

If **yes**, at what class and sample size? _____

- Other (please explain): _____

_____

2.4 What method of varietal maintenance of material is acceptable within the certification program?

- Tissue culture *in vitro* **Yes** **No**

How long is it maintained in the tissue culture bank ____ years

- Tissue culture *in vitro* and clonal selection **Yes** **No**

- Clonal and roguing **Yes** **No**

- Roguing only **Yes** **No**

2.5 Varietal selection and maintenance activities within the certification programme are performed by:

- Official service **Yes** **No**

- Private enterprise **Yes** **No**

- Both **Yes** **No**

- Other (please explain): _____

_____

2.6 Does your system recognize accredited or authorized service providers for certification purposes?

For:	- Field Inspection	**Yes**	**No**
	- Sampling	**Yes**	**No**
	- Tuber Inspection	**Yes**	**No**
	- Laboratory analysis	**Yes**	**No**

2.7	Are fees charged in association with certification procedures?	**Yes**	**No**
For:	- Administration/Application approval	**Yes**	**No**
	- Field Inspection	**Yes**	**No**
	- Sampling	**Yes**	**No**
	- Tuber Inspection	**Yes**	**No**
	- Laboratory Analysis	**Yes**	**No**

2.8	Are there breeding activities in the country	**Yes**	**No**

3. CLASSIFICATION SYSTEM:

List classes by chronological age:

Limited (field) generation system:

classes: _____

_____

3.1 What are the maximum number of multiplications/generations allowed for ?

material used prior to pre-basic seed production (pre-basic TC)

- *In vitro* _____

- Greenhouse _____

- Total number of field generations permitted _____

3.2 Does your country have specialized requirements for production of seed potatoes in authorized controlled areas? **Yes** **No**

If **yes**, please explain: _____

_____

3.2 Are different seed potato fields of the same variety, class and category allowed to be combined into one lot under a single certification number? **Yes** **No**

of the same farm holding for which generation:

Generation	**Yes**	**No**
Field Generation 1		
Field Generation 2		
Field Generation 3		
Field Generation 4		
Field Generation 5		
Field Generation 6		

of different farm holdings for which generation:

Generation	**Yes**	**No**
Field Generation 1		
Field Generation 2		
Field Generation 3		
Field Generation 4		
Field Generation 5		
Field Generation 6		

4. REQUIREMENTS PRIOR TO PLANTING

4.1 Are minimum crop rotation intervals (years) required between seed potato crops ? **Yes** **No**

Generation	**Years**
Field Generation 1	
Field Generation 2	
Field Generation 3	
Field Generation 4	
Field Generation 5	
Field Generation 6	

4.2 Does your system regulate production areas for the following specific pests?

4 .2.1 *Globodera rostochiensis* **Yes** **No**

Is it based on pest free areas? **Yes** **No**

Are soil analysis required prior to planting **Yes** **No**

- Size of sample(g/ha) _____
- Tolerance (number of cysts) _____
- Examination of roots at the time of field inspection _____
- Tolerance (number of cysts) _____

4 .2.2 *Globodera pallida*: **Yes** **No**

Is it based on pest free areas? **Yes** **No**

Are soil analysis required prior to planting? **Yes** **No**

- Size of sample (g/ha) _____
- Tolerance (number of cysts) _____
- Examination of roots at the time of field inspection _____
- Tolerance (number of cysts) _____

4 .2.3 *Synchitrium endobioticum*: **Yes** **No**

Is it based on pest free areas? **Yes** **No**

Are soil analysis required prior to planting **Yes** **No**

- Size of sample (grammes) _____

- Tolerance (number of spores) _____

4.2.4 *Ralstonia solanacearum* **Yes** **No**

Is it based on pest free areas? **Yes** **No**

Are analysis required prior to planting ? **Yes** **No**

- Soil **Yes** **No**

- Water **Yes** **No**

- Size of sample (grammes) _____

- Tolerance _____

4.2.5 *Clavibacter michiganensis* sub sp. *Sepedonicus* **Yes** **No**

Is it based on pest free areas? **Yes** **No**

Are analysis required prior to planting? **Yes** **No**

- Soil **Yes** **No**

- Water **Yes** **No**

- Size of sample (grammes) _____

- Tolerance _____

4.2.6 Other pests of concern _____

Soil analysis of field to be performed _____

Size of sample (grammes) _____

Tolerance (number of spores,cells etc...) _____

5 REQUIREMENTS FOR GROWING CROP

5.1 Are field inspections mandatory? **Yes** **No**

5.1.1 Are growing crop inspection reports completed by field inspectors for every seed potato crop/field? **Yes** **No**

5.2 Is there a minimum distance of isolation between seed potato crops? **Yes** **No**

Complete the appropriate table in (m) describing the isolation distances between each category of potatoes:

Distance (m)	**Generation**						
	FG1	FG2	FG3	FG4	FG5	FG6	
							Field Generation 1
							Field Generation 2
							Field Generation 3
							Field Generation 4
							Field Generation 5
							Field Generation 6
							Ware

5.3 Are minimum distances established for categories and classes of the same variety? **Yes** **No**

If **yes**, distance in meters _____

5.4 Is official sampling carried out on the growing crop? **Yes** **No**

Table indicating type and size (number) of sample on the growing crop e.g., 400 leaves for PLRV

Field Generation System	**Leaves**	**Stems**	**Roots**	**Tubers**	**Reason(s)**
Field Generation 1					
Field Generation 2					
Field Generation 3					
Field Generation 4					
Field Generation 5					
Field Generation 6					

5.5 Is premature haulm destruction directed by the certification authority (obligatory/recommended)?

Generation	**Obligatory**	**Reccomended**
Field Generation 1		
Field Generation 2		
Field Generation 3		
Field Generation 4		
Field Generation 5		
Field Generation 6		

- depends on the cultivar _____

If **obligatory** or **recommended**, what criteria is used in analysis? i.e., dates from planting, Aphid counts etc (please explain):

_____

_____

5.6 Minimum number of official field inspections;

Field Generation 1 _____ Field Generation 4 _____

Field Generation 2 _____ Field Generation 5 _____

Field Generation 3 _____ Field Generation6 _____

5.6 Are the following criteria measured and/or recorded on the seed potato crop?

- Vigor **Yes** **No**
- Plant Emergence **Yes** **No**
- Uniformity **Yes** **No**
- Overall health of the crop **Yes** **No**
- Weediness of the crop **Yes** **No**

5.8 Field Inspection Standards:

Varietal purity and type

		Tolerance %	
Generation		Off-type (including mutation, abberants)	Mixture of varieties
FG1			
FG2			
FG3			
FG4			
FG5			
FG6			

Pathogen	Reported (R) Not reported (NR)	**Tolerance %**					
		Field Generation 1	Field Generation 2	Field Generation 3	Field Generation 4	Field Generation 5	Field Generation 6
Severe Mosaic							
Leaf roll Virus							
Mild Mosaic							
Other viruses							
Total virus							
Potato Wart, *Synchitrium endobioticum*							
Blackleg, *Erwinia* spp.							
Bacterial Ring rot, *Clavibacter michiganensis* subsp. *sepedonicus*							
Brown rot, *Ralstonia solanacearum*							
Rhizoctonia solani							
Late Blight, *Phytophthora infestans*							
Early Blight, *Alternaria solani*							
Purple top, Stolbur, Aster yellows (phytoplasma)							
Wilts, *Verticillium spp. Fusarium spp*.							
Other							
Other							
Other							

For tolerances please specify the tolerance (%) or indicate whether the organism is prohibited (P)

6 POST HARVEST CONTROL

6.1. Is Post Harvest Control performed on tuber samples before seed lot is eligible for final certification?

Generation	y	%	n
Field Generation 1			
Field Generation 2			
Field Generation 3			
Field Generation 4			
Field Generation 5			
Field Generation 6			

6.1.1Post Harvest testing consists of:

Generation	**Laboratory test**		**Field Grow out**		**Both**	
	Yes	No	Yes	No	Yes	No
Field Generation 1						
Field Generation 2						
Field Generation 3						
Field Generation 4						
Field Generation 5						
Field Generation 6						

6.1.2 Minimum size of sample; Laboratory Field Grow out

Field Generation 1 _____ _____

Field Generation 2 _____ _____

Field Generation 3 _____ _____

Field Generation 4 _____ _____

Field Generation 5 _____ _____

Field Generation 6 _____ _____

Depends on the cultivar and the area _____

6.1.3 Is Sampling carried out by

- Government officer **Yes** **No**

- Authorized or accredited person **Yes** **No**

- Other (please elaborate) _____

_____

Pathogens evaluated by Post Harvest Control

Pathogen/ Disease/ Fault	**Type of test**		**Analysis method**				Other	**Tolerance %** or Presence **(P)** or Absence **(A)** Depends on the generation						**Sample size**
	Lab	Field	visual	PCR	IMF	ELISA		FG 1	FG 2	FG 3	FG 4	FG 5	FG 6	
Clavibacter michiganensis sepedonicus														
Ralstonia solanacearum														
Erwinia spp.														
PLRV														
PVY														
PVX														
PVM														
PVS														
PVA														
Severe Mosaic														
Mild Mosaic														
Other viruses														
Spongospora subterranea														
Globodera rostochiensis														
Globodera pallida														
Meloidogyne chitwoodii														
Synchytrium endobioticum														

PSTV Potato Spindle tuber viroid														
Varietal mixture														
Other														

For lab test indicate test sample on leaves (L), sprouts (S) or tubers (T)

7 TUBER INSPECTION REQUIREMENTS

7.1 Is tuber inspection prior to marketing mandatory? **Yes** **No**

- Other (please elaborate) _____

_____

7.2 Is Sampling carried out by?

- Government officer **Yes** **No**

- Authorized or accredited person **Yes** **No**

- Other (please elaborate) _____

_____

For:

Generation	**Yes**	**No**
Field Generation 1		
Field Generation 2		
Field Generation 3		
Field Generation 4		
Field Generation 5		
Field Generation 6		

7.3 When are tubers samples taken for inspection?

- At the time of grading **Yes** **No**

- Packaging **Yes** **No**

- After packaging **Yes** **No**

- Other (please specify) _____

_____

7.3.1 Are washing of seed tubers (lots) prohibited by regulation? **Yes** **No**

7.4 Inspection of graded tubers prior to marketing **Yes** **No**

7.4.1 Tuber Size Standards:

Generation	**Size Range (mm)**	**Tolerance %**		
		oversize	undersize	total
Field Generation 1				
Field Generation 2				
Field Generation 3				
Field Generation 4				
Field Generation 5				
Field Generation 6				

7.4.2 Tuber Standards

Defects, Diseases and Physiological Disorders	**Tolerance %**						**Analysis**	
	FG 1	FG 2	FG 3	FG 4	FG 5	FG 6	visual	lab
Soil and Extraneous Matter								
Growth Cracks								
Malformed (off type)								
Bruising								
Internal Discoloration								
Mechanical defects								
Total Defects								
Blackleg Erwinia spp								
Other wet rots								
Total wet rots								
Dry rot, Fusarium spp								
Alternaria solani *(early blyte)*								
Phytophthora infestans *(late blyte)*								
Phoma exigua *(gan gree)*								
Total Dry rots								
Spongospora subterranea (powdery scab)								
Streptomyces scabies (common scab)								
Rhizoctonia solani (black scuff)								
Helminthosporium solani (silver scuff)								
Globodera rostochiensis								
Globodera pallida								
Ditylenchus destructor								
Ditylenchus dipsaci								
Meloidogyne chitwoodi and fallax								
Synchytrium endobioticum (wart disease)								
Clavibacter michiganensis subsp. Sepedonicus (ring rot)								
Ralstonia solanacearum (brown rot)								
Tobacco Rattle Virus *(spraing)*								
Superficial necrosis of viral origin								
Potato Mop Top Virus *(spraing)*								

If no tolerance is applied please indicate with (N/T)

7.5 Are Fungicidal disinfectants (for example; against rhizoctonia or common scab) required for certification?

	y	n
required		
recommended		
prohibited		

Chemicals Approved Organism controlled

_____ _____

_____ _____

7.6 Other chemical treatments required _____

_____

8 REQUIREMENTS FOR PACKAGING AND LABELING

8.1. Are the closing of packages done under supervision by

- Government officer **Yes** **No**

- Authorized or accredited person **Yes** **No**

- Other (please elaborate) _____

_____

8.2. Is each package supplied with;

- A certificate inside **Yes** **No**

- A label outside **Yes** **No**

- A seal **Yes** **No**

- Other systems of closing _____

_____

8.3. Are seed potato shipments allowed in bulk? **Yes** **No**

8.3.1 What documentation must accompany shipments in bulk?

- Invoice **Yes** **No**

- Bill of Lading **Yes** **No**

- Bulk movement certificate **Yes** **No**

- Sealed with an official label **Yes** **No**

8.4 Characteristics of packages allowed

8.4.1 Is there a limit to the specific kind of packages (bags, wooden crates, boxes, mini-totes [1MT bags])? **Yes** **No**

Please describe _____

_____

Maximum weight of each unit _____ kg

Minimum weight of each unit _____ kg

% variation allowed _____ %

Table Describing Information Required on Seed Tag (Label)

Information contained on label or seed tag	FG1	FG2	FG3	FG4	FG5	FG6
Colour of label						
Nature of contents i.e., Seed Potatoes						
Certifying body or authority						
Producer's identification number						
Field identification number						
Lot number						
Variety						
Country of Production						
Area of Production						
Category						
Class						
Size						
Declared net weight						
Crop year						
Date of printing						

Other particulars _____