

**PATHOGEN-  
TESTED  
POTATO  
GERMPLASM  
FOR  
DISTRIBUTION**



**INTERNATIONAL POTATO CENTER (CIP)**

## **CIP Regional Offices**

### **Latin America & the Caribbean**

Apartado 1558  
Lima 12, PERU  
Phone: (51-1) 349-6017  
Fax: (51-1) 349-5638  
E-mail: [cip@cgnet.com](mailto:cip@cgnet.com)

### **South & West Asia**

IARI Campus  
New Delhi 110012, INDIA  
Phone: (91-11) 574-8055/573-1481  
Fax: (91-11) 573-1481  
Telex: 31-73-168 EIC IN  
Cable: CIPAPA, New Delhi  
E-mail: [cip-delhi@cgnet.com](mailto:cip-delhi@cgnet.com)

### **Sub-Saharan Africa**

P.O. Box 25171  
Nairobi, KENYA  
Phone: (254-2) 632-054/632-206  
Fax: (254-2) 630-005  
Telex: (963) 22040 ILRAD  
Cable: CIPAPA, Nairobi  
E-mail: [cip-ngo@cgnet.com](mailto:cip-ngo@cgnet.com)

### **East, Southeast Asia & the Pacific**

c/o CRIFC,  
P.O. Box 929  
Bogor 16309, INDONESIA  
Phone: (62-251) 317-951/313-687  
E-mail: [cip-bogor@cgnet.com](mailto:cip-bogor@cgnet.com)

**Requests for genetic material from CIP Headquarters  
should be addressed as follows:**

### **Plant Propagation/Seed Unit**

International Potato Center  
P.O. Box 1558  
Lima 12, Peru  
(Attn.: Dr. Noël Pallais)  
Phone: (51-1) 349-6017  
Fax : (51-1) 349-5638  
E-mail: [n.pallais@cgnet.com](mailto:n.pallais@cgnet.com)

**PATHOGEN-  
TESTED  
POTATO  
GERMPLASM  
FOR  
DISTRIBUTION**



**INTERNATIONAL POTATO CENTER (CIP)**

International Potato Center (CIP)  
P.O. Box 1558  
Lima 12, Peru

CIP (International Potato Center). 1998. Pathogen-tested potato germplasm for distribution. Fourth edition. Lima, Peru.

## CONTENTS

	Page
Preface	iv
General Information	1
Availability of Germplasm	1
Special Needs	3
Pedigrees	4
Health of Available Germplasm	4
How to Order	4
Help CIP Help you	5
Material Transfer Agreement (MTA)	5
Material Transfer Agreement (MTA) Form	8
Standard Order Form	9
Shipment Notice	10
CIP Phytosanitary Statement	11
Explanation of Column Headings	13
Status "F" Lists	Appendix A
▪ Potato varieties & advanced cultivars	
▪ Special purpose potato clones	
▪ Wild and primitive potato cultivars	
Status "R" List:	Appendix B
▪ Potato breeder's material and misc. cultivars	
List of true potato seed progenies	Appendix C



## Preface

We are proud to present this revised version of *Pathogen-tested Potato Germplasm for Distribution*, containing the latest information available. Special thanks go to all CIP scientists and collaborators who continuously provide information to make these lists more useful.

We would like to point out that you can obtain the information in these lists through the computer network available at CIP Headquarters and in our Regional and Liaison Offices around the world. Please note that from now on all recipients of genetic material distributed by CIP will be required to sign a Material Transfer Agreement (MTA) or a Standard Order Form (SOF) to protect the interests of humanity, to whom these materials belong. We would also like to inform our users that CIP will charge private companies a fee for material in order to help CIP cover operational costs of "cleaning," maintenance, preparation, and shipping and handling. Your collaboration and understanding are appreciated.

We encourage all scientists who receive genetic material from CIP to continue sending us results from their research to enhance the quality of our information for the benefit of all users.

June, 1998

Wanda Collins  
Deputy Director General  
for Research

Noël Pallais  
In charge,  
Plant Propagation/Seed Unit





## **GENERAL INFORMATION**

The International Potato Center (CIP) maintains several collections of pathogen-tested potato germplasm for worldwide distribution:

1. Cultivars and advanced clones used for adaptation trials, and/or varieties used in seed production programs.
2. Wild and native cultivars from CIP's world potato collection. These are used almost exclusively in advanced breeding programs. True seeds from these are also available upon special request.
3. Clones to be used as differentials, indicator host plants, and for special purposes.
4. True potato seed (TPS) families for adaptation trials and use for ware potato production.

Developing countries are releasing varieties from CIP's germplasm, or clones from other sources. Programs or individuals who want to have them freed of pathogens and pests for seed production purposes should contact their nearest CIP Regional Office.

## **AVAILABILITY OF GERmplasm**

Developing countries receiving cooperation from CIP should send all requests for pathogen-tested (PT) potato materials to the nearest CIP Regional Office. Developed countries should send their requests directly to CIP Headquarters in Lima, Peru.

Germplasm listed in the attached lists are available in the following forms:

- ***In vitro* plantlets:** The plantlets are sent in test tubes with two plants per tube and two tubes per cultivar. Shipments are made in February and August of each year.
- ***Mini-Tubers from CIP-Lima:*** These mini-tubers are produced in pots from *in vitro* tested stocks under strict quarantine conditions and are usually sent in shipments of 5-10 tubers per clone. Tuber weight varies from 5 to 10 grams. Tubers of uniform size are sent when available. Clones are grown when Lima's climatic conditions permit tuberization. For this reason, requests must be received in October for dispatch to begin in August of the following year. Accessions marked with an asterisk (\*) are in low demand and are available only as *in vitro* plantlets.
- ***Tubers from CIP Regional Distribution Centers:*** CIP is developing continental centers in order to provide developing countries with more and larger tubers for replicated trials. Tubers are produced at different planting dates and clones with similar resistances are likely to be produced at the same time. Requests must be placed well in advance with the corresponding CIP Regional Office.
- ***Clones with resistance to late blight:*** Clones from CIP's International Late Blight Trial are also available as tubers or *in vitro* plantlets.
- ***Progenitors:*** CIP also has progenitors available for breeding programs. For more information about this, please contact the corresponding Regional Representative.

## Segregating Populations

- ***True seed of segregating populations for varietal selection:*** Populations can be produced incorporating two or more characteristics (resistances, agronomic characteristics, etc.). The number of seeds per progeny may vary according to availability. These populations are available to countries with breeding programs having the required facilities.
- ***Tuber families:*** Mini-tubers are produced in quarantine screenhouses using true seed of segregating populations. One tuber from each plant is grouped to form a family for shipment. All requests must be received in October for dispatch to begin in August of the following year.
- ***True potato seed (TPS) for producing ware potatoes:*** This seed is available in packets of 2,000 seeds for initial trials. TPS of the best performing families are supplied in larger quantities when available. CIP can provide tested stocks of parental lines for local TPS production either as micro-tubers, mini-tubers, or *in vitro* plantlets.

## SPECIAL NEEDS

Please inquire about special needs such as haploid inducers, dihaploids and meiotic tetraploids from 2x 4x or 4x 2x crosses, etc., by sending requests directly to Plant Propagation/Seed Unit, CIP, Lima, Peru.

## **PEDIGREES**

Complete pedigrees, when available, will be supplied upon request. Progenitors of each clone or variety are usually included in the list sent with the shipment.

## **HEALTH OF AVAILABLE GERmplasm**

CIP makes every effort to ensure the material is free from known pathogens and pests. A Phytosanitary Statement is issued with each shipment listing the pathogens for which testing was done. All tuber material is produced in pots in quarantine screenhouses. A Phytosanitary Certificate from the country where the Distribution Center is located is included. Shipments can be made from CIP-Lima or from CIP Regional Distribution Centers.

## **HOW TO ORDER**

Please include the following information with your order:

1. CIP number and clone or variety name, or a description of the type of segregating material required. (Example: "Material resistant to late blight.")
2. Anticipated planting date and preferred arrival date.
3. Type of material preferred: *in vitro* plantlets, micro-tubers, mini-tubers, or seeds (TPS).
4. Preferred method of shipment; small shipments are sent airmail or via courier; large shipments are sent by air freight. For air freight, please give the name(s) of the preferred airline(s).

5. Correct name and address of recipient as it should appear on the package. Courier services require street addresses (not P.O. Box numbers) and telephone and fax numbers.
6. Local import permits, licenses, and labels, when needed, must be received at CIP-Lima or CIP's Regional Office at least two weeks prior to shipping.

### **HELP CIP HELP YOU**

- Please be specific in your request.
- Give extra climatic data when you request the genetic material.
- Please let us know your best local variety(ies).
- Indicate the minimum and maximum number of accessions you want.
- Please provide the expected planting date.
- Indicate fax, telex, and telephone numbers so we can notify you of shipment details.
- Send back the results of yields, selections, resistances, adaptation, etc. These data help CIP select better material in the future, as well as update the data base.

### **MATERIAL TRANSFER AGREEMENT (MTA)**

Prior to sending the genetic material requested, we will ask the institution receiving it to sign a Material Transfer Agreement (MTA) form for "non-designated" germplasm

and a Standard Order Form (SOF) in the case of “designated” germplasm. Forms are shown on the following pages. The MTA and/or SOF, properly signed, must be returned to CIP before the material can be dispatched. The shipment of “designated” germplasm will be accompanied by a Shipment Notice.

**“Designated germplasm”** consists of materials subject to the agreement between the International Potato Center and the Food and Agriculture Organization of the United Nations (FAO) placing collections of plant germplasm under the auspices of FAO dated 26 October 1994, which states that:

1. The recipient shall not claim ownership over any material received, nor seek intellectual property rights over that germplasm or related information.
2. The recipient shall ensure that any subsequent persons or institutions to whom samples of the germplasm may be provided, are bound by the same provision.

**“Non-designated germplasm”** consists of materials which do not fall under the above agreement but are governed by the following conditions:

1. The material will be used only for research and breeding purposes
2. If this material is modified or used to derive a process or product of commercial value, due acknowledgement will be given to CIP for having provided the source material.
3. The material being provided by CIP can be distributed to other institutions, providing the new recipients accept these policies before receiving the material.

4. The recipient agrees to inform CIP of any commercial release of progenies or genetically modified organisms derived from this material.
5. CIP respects any breeders' rights officially recognized in genetic materials generated by other institutions. CIP may also distribute this type of material, which must be used for research purposes only.



## INTERNATIONAL POTATO CENTER (CIP)

Apartado 1558 - Lima 12, PERU  
Phones: (51-1) 349-6017; 349-5783. Fax: (51-1) 349-5638. Email: CIP@cgnnet.com

### Material Transfer Agreement (MTA) for Enhanced (non-designated)\* Germplasm

(CIP Phytosanitary Statement No. PS- -98)

\_\_\_\_\_, represented by \_\_\_\_\_,  
(Name of the Institute) (Name of the recipient),  
recipient of the genetic material provided by CIP and listed in the attached, declares that  
they accept CIP policies on the use of this genetic material:

1. The material will be used for research and breeding purposes only.
2. If this material is modified or used to derive a process or product of commercial value, due acknowledgment will be given to CIP for having provided the source material.
3. The material being provided by CIP can be distributed to other institutions, providing the new recipients accept these policies before receiving the material.
4. The recipient agrees to inform CIP of any commercial release of progenies or genetically modified organisms derived from this material.
5. CIP respects any breeders' rights officially recognized in genetic materials generated by other institutions. CIP may also distribute this type of material, which must be used for research purposes only. Owners of these rights must be consulted for any intended commercial use.

\_\_\_\_\_  
Name

\_\_\_\_\_  
Position

\_\_\_\_\_  
Authorized Signature

\_\_\_\_\_  
Date

Under no circumstances will CIP grant permission to establish intellectual property rights to designated materials, as defined under the Convention on Biological Diversity, originating from germplasm banks maintained at CIP.

The International Potato Center (CIP) is a scientific, nonprofit institution dedicated to the increased and more sustainable use of potato, sweetpotato, and other roots and tubers in the developing world, and to the improved management of agricultural resources in the Andes and other mountain areas. CIP is funded by members of the Consultative Group on International Agricultural Research (CGIAR).  
(CIP-MTA, June 1998)



## STANDARD ORDER FORM

I/we order the germplasm samples as per the attached list.

Insofar as this material is "designated germplasm" under the agreement between the International Potato Center and the Food and Agriculture Organization of the United Nations (FAO) placing collections of plant germplasm under the auspices of FAO dated 26 October 1994,\*

I/we agree

- a. not to claim ownership over any material received, nor to seek intellectual property rights over that germplasm or related information; and
- b. to ensure that any subsequent persons or institutions to whom I/we shall provide samples of this germplasm, are bound by the same provisions.

\_\_\_\_\_  
Name

\_\_\_\_\_  
Title

\_\_\_\_\_  
Institution

\_\_\_\_\_  
Address

\_\_\_\_\_  
Shipping address (if different from the above)

\_\_\_\_\_  
Authorized signature

\_\_\_\_\_  
Date

For CIP's use on return: **CIP Phytosanitary Statement No.: PS- -98**

\* Whether or not the material is "designated germplasm" will be indicated on the seed list attached to the Shipment Notice and on the seed packets.  
(CIP-SOF June 1998)



## INTERNATIONAL POTATO CENTER (CIP)

Apartado 1558 - Lima 12, Peru  
Phones: (51-1) 349-6017; 349-5783. Fax: (51-1) 349-5639. Email: CIP@cgnet.com

### INTERIM MATERIAL TRANSFER AGREEMENT SHIPMENT NOTICE

(CIP Phytosanitary Statement No.: PS- 98)

In response to your request signed and dated \_\_\_\_\_, you are receiving with this notice the germplasm samples as indicated on the attached list.

The International Potato Center does not warrant the safety, quality, viability or purity (genetic or mechanical) of the germplasm nor the accuracy of passport or other data provided with it. Its phytosanitary condition is only warranted as described in the attached Peruvian Phytosanitary Certificate and CIP's Phytosanitary Statement.

It is the recipient's responsibility to comply with the recipient country's biosafety and import regulations and any of the recipient country's rules governing the release of genetic material.

Samples indicated as "Designated Germplasm" on the list and on the containers are subject to the agreement between the International Potato Center and the Food and Agriculture Organization of the United Nations (FAO) placing collections of plant germplasm under the auspices of FAO, dated 26 October 1994, and are thus subject to the following conditions:

- a) The recipient agrees not to claim ownership over the material received, nor to seek intellectual property rights over that germplasm or related information.
- b) The recipient agrees to ensure that any subsequent persons or institutions to whom the recipient makes samples of the germplasm available, are bound by the same provision.

\_\_\_\_\_  
Name of recipient

\_\_\_\_\_  
Institution

\_\_\_\_\_  
Address

\_\_\_\_\_  
For International Potato Center  
Date: \_\_\_\_\_

The International Potato Center (CIP) is a scientific, nonprofit institution dedicated to the increased and more sustainable use of potato, sweetpotato, and other roots and tubers in the developing world, and to the improved management of agricultural resources in the Andes and other mountain areas. CIP is funded by members of the Consultative Group on International Agricultural Research (CGIAR).

(CIP-MTASN June 1998)



## INTERNATIONAL POTATO CENTER (CIP)

Address: Aparado 1558 - Lima, Perú. Telex: 25672 PE. Cable: CIPAPA, Lima  
Phones: (51-1) 436-6920; 436-4354. FAX: (51-1) 435-1570. E-Mail: [cip@cgnet.com](mailto:cip@cgnet.com) or [cip@cipa.org.pe](mailto:cip@cipa.org.pe)

### PHYTOSANITARY STATEMENT

This is to certify that the tubers, true seed, in vitro cultures or cuttings, or representative samples of them, were thoroughly examined on (date of dispatch): \_\_\_\_\_

by (name): \_\_\_\_\_

a Senior Scientist of the International Potato Center; and that the consignment is believed to conform to the declaration below.

### ADDITIONAL DECLARATION

#### CHECK APPLICABLE STATEMENT(S) / CROSS OUT NON-APPLICABLE STATEMENTS

- The mother plants were tested and found negative to sweetpotato leafhopper mottle virus (SPFMV), sweetpotato mild mottle virus (SPMMV), sweetpotato latent virus (SPLV), and sweetpotato chlorotic fleck virus (SPCFV=C-2) by serology and to potato spindle tuber viroid (PSTVd) by nucleic acid spot hybridization test (NASHT). The mother plants also tested negative to the above viruses and other agents infecting the indicator hosts *I. nil* and *I. setosa*. They were also found free of sweetpotato viruses disease (SPVD) by challenge inoculation onto SPFMV-infected "TIB-8" clone.
- True seed harvested from pathogen tested mother plants and grown under controlled conditions.
- True seed from non tested mother plants.
- Other:

### DESINFECTATION TREATMENTS

DATE

TREATMENT

CHEMICAL AND CONCENTRATION



## **EXPLANATION OF COLUMN HEADINGS**

### **1. CIP number**

All potato accessions at CIP, regardless of origin, receive an identification number. If an accession has received two numbers; synonyms are listed in the "comments" column.

### **2. Cultivar name**

The name or code of the cultivar, when it was first received at CIP, is used. If a cultivar is named by the country of origin, this name is used and the previous code is listed under "comments." If a country other than the country of origin names the cultivar, the original name or code is maintained, and the new name is listed under "comments" using the United Nations country code of the naming country. A given cultivar could have two or more names as an initial code. However, CIP encourages the use of the original name (not the code).

### **3. Origin**

To identify the country of origin of the cultivar, the three-letter standard abbreviations provided by the Statistical Office of the United Nations are used.

### **4. Chromosome numbers and species**

These are given only to wild and native cultivars with CIP numbers from the 70 and 76 series. These cultivars are used exclusively in advanced breeding programs.

References:

1. Simmonds, N.W. 1963. Abbreviations of potato names. *European Potato Journal* 6(3):186-190.
2. Huamán, Z. and R.W. Ross. 1985. Updated listing of potato species names, abbreviations, and taxonomic status. *American Potato Journal* 62(11):629-641.

5. **Tuber skin color**

Three-digit codes are used:

First number	=	Predominant color	A
Second number	=	Secondary color	B
Third number	=	Distribution of secondary color	C

**A. Predominant**

1. White-cream
2. Yellow
3. Orange
4. Brownish
5. Pink
6. Red
7. Purplish red
8. Purple
9. Dark purple-black

**B. Secondary**

0. Absent
1. White-cream
2. Yellow
3. Orange
4. Brownish
5. Pink

- 6. Red
- 7. Purplish red
- 8. Purple
- 9. Dark purple-black

**C. Distribution of secondary color (Fig. 1)**

- 0. Absent
- 1. Pigmented eyes: Pigmentation is confined to the eyes only.
- 2. Pigmented eyebrows: Pigmentation is present in the eyebrows only.
- 3. Splashed: Pigmentation is confined to areas around the eyes.
- 4. Scattered: Pigmentation is distributed at random in one or more areas of the tuber.
- 5. Spectacled: Areas around the eyes do not show pigmentation but the remainder of the tuber is pigmented.
- 6. Stippled: Surface of the tuber is more or less uniformly covered with spots.
- 7. Other

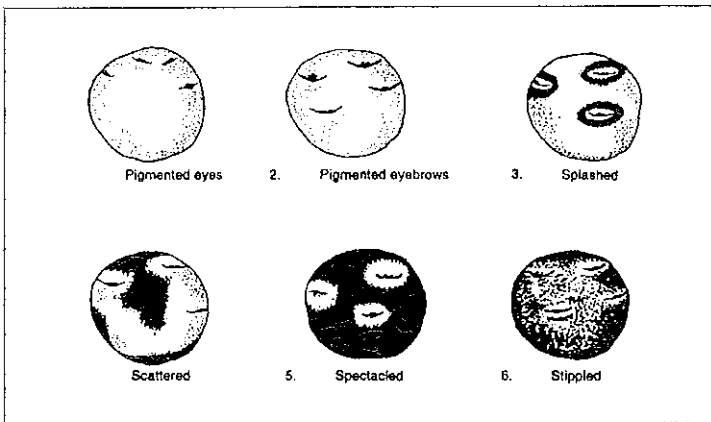


Figure 1. Distribution of secondary tuber skin color.

Reference:

3. Huamán, Z., J.T. Williams, W. Salhuana, and L. Vincent. 1977. Descriptors for the cultivated potato and for the maintenance and distribution of germplasm collections. International Board for Plant Genetic Resources, Rome, Italy. 47 p.

## 6. Tuber flesh color

Three-digit codes are used:

First number	=	Predominant color	A
Second number	=	Secondary color	B
Third number	=	Distribution of secondary color	C

### A. Predominant

1. White
2. Cream
3. Pale yellow
4. Yellow
5. Deep yellow
6. Red
7. Violet
8. Purple
9. Other

### B. Secondary

0. Absent
1. White
2. Cream
3. Pale yellow
4. Yellow
5. Deep yellow
6. Red
7. Violet



- 8. Purple
- 9. Other

**C. Distribution of secondary color (Fig. 2)**

- 0. Absent
- 1. Scattered spots
- 2. Scattered areas
- 3. Narrow vascular ring
- 4. Broad vascular ring
- 5. Vascular ring and medulla (pith)
- 6. All flesh except medulla (pith)
- 7. Other

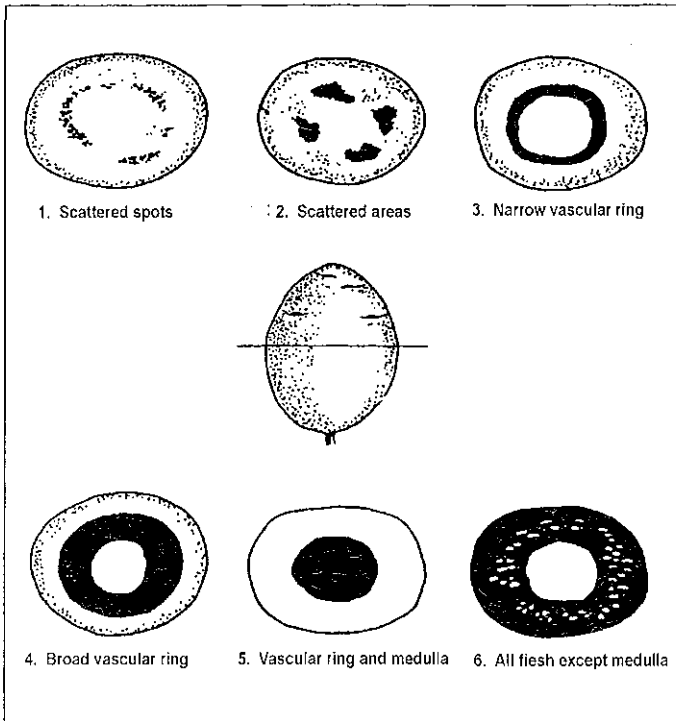


Figure 2. Distribution of secondary tuber flesh color.

## 7. Tuber shape

Three-digit codes are used:

First number	=	General tuber shape	A
Second number	=	Unusual tuber shape	B
Third number	=	Eye depth	C

### A. General tuber shape (Fig. 3)

1. Compressed (oblate): Major axis is the shortest axis.
2. Round: An almost circular outline.
3. Ovate: An outline resembling the longitudinal section of an egg.
4. Obovate: An outline that is inversely ovate and broadest within one-third of the distance from the apical end (rose or eye end).
5. Elliptic: An outline with about the same width at equal distance from the bottom and the top, which are both slightly acute.
6. Oblong-oval: An almost rectangular outline with sides nearly parallel or slightly wider at the middle and rounded corners. The length/width ratio should not be more than 3 to 2.
7. Long-oblong: An oblong outline whose length/width ratio is approximately 2 to 1.
8. Long: A long rectangular outline whose length/width ratio is 3 to 1 or more.

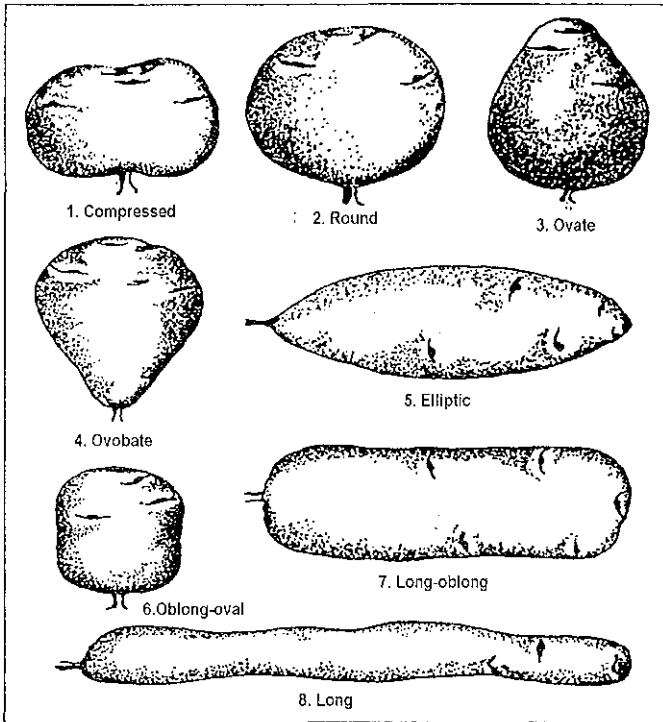


Figure 3. General tuber shape.

**B. Unusual tuber shape (Fig. 4)**

- 0. Absent
- 1. Flattened: if the length of the transverse section, at any point of the tuber, is more than three times as long as its width.
- 2. Clavate: resembling an elongated club, thickened at one end.
- 3. Reniform: kidney-shaped.
- 4. Fusiform: spindle-shaped, tapering gradually at both ends.

5. Falcate: curved or shaped like a sickle or horseshoe.
6. Coiled: long and coiled, or bent at one end.
7. Digitate: resembling a hand or a fist.
8. Concertina-shaped: Resembling a "concertina."
9. Tuberos: covered with few or many small lumps and tubers. It includes tubers shaped like a pineapple or a cluster of grapes with internodes raised.

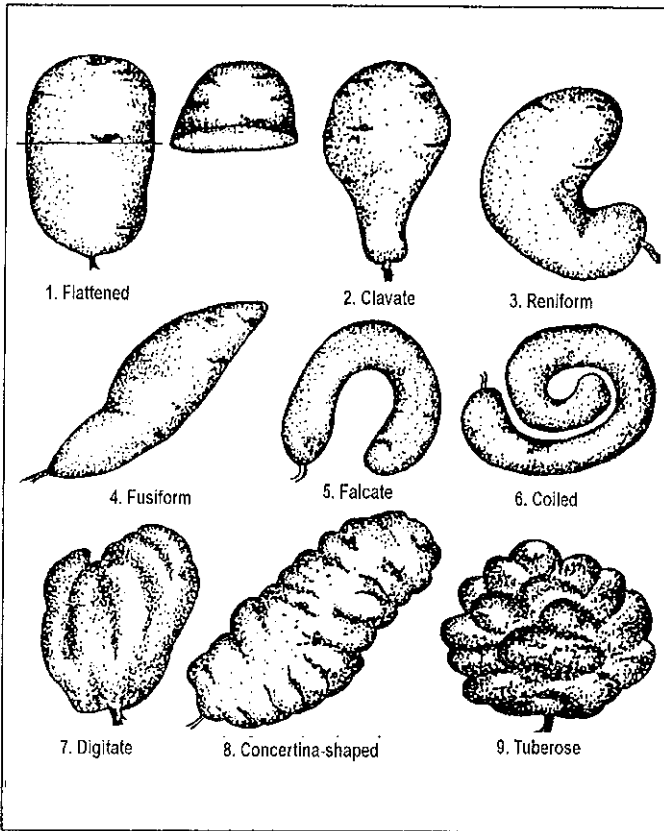


Figure 4. Unusual tuber shape.

**C. Depth of eyes (scale of 1 to 9)**

- 1. Protruding
- 3. Shallow
- 5. Medium
- 7. Deep
- 8. Very deep

**8. Resistance data**

- LB = *Phytophthora infestans* (late blight)
- WART = *Synchytrium endobioticum* (black wart)
- BW = *Pseudomonas solanacearum* (bacterial wilt)
- PLRV = Potato leafroll virus
- PVY = Potato virus Y
- PVX = Potato virus X
- G.PALL = *Globodera pallida* (cyst nematode)
- G.ROST = *Globodera rostochiensis* (golden nematode)
- MELOIDOG = *Meloidogyne* spp. (root-knot nematode)
- HAIL = Hail
- FROS = Frost
- TGA = Total glycoalkaloids (mg/100 g fresh weight)

The following codes are used, where applicable, for all diseases, insects, nematodes, aluminum toxicity, frost, and hail:

- |                             |                               |
|-----------------------------|-------------------------------|
| I = Immune                  | S = Susceptible               |
| R = Resistant               | T = Tolerant                  |
| MR = Moderately resistant   | ? = Preliminary data          |
| MS = Moderately susceptible | - = Information not available |

- Type of LB resistance:            M = R-genes present  
                                          r = R-genes absent

For viral diseases and nematodes, tolerant (T) should be interpreted as a degree of resistance or susceptibility, although the cultivar yields reasonably well in spite of infection. A letter code followed by a question mark (?) indicates that the rating is preliminary and must be confirmed.

No attempt has been made to list races, pathotypes, or strains. In special cases, these may be listed under "comments." Ratings are meant to give a relative comparison of cultivars. Data are taken from formal research results when possible, and may be supplemented with field observations. All data collections need permanent updating. Recipients of clones or cultivars should provide CIP with new or missing data when known.

9. **Dry matter** (in the area of the cultivar's best adaptation; H = high; M = medium; and L = low)

DRY MAT = Dry matter

H = > 24%	M = 18-24%	L = < 18%
-----------	------------	-----------

Reference:

4. Burton, W.G. 1966. The potato. 2nd ed. Wageningen, Netherlands. p. 305-307.

10. **Maturity** (in the area of the cultivar's best adaptation; E = early; M = medium; and L = late)

E = < 90 days	M = 90-120 days	L = > 120 days
---------------	-----------------	----------------

## 11. Adaptation to environment

- TEMPERATE = Normal temperate zone climate  
COOL TROP = Cool tropical climate, night temperature normally less than 15°C  
WARM TROP = Warm tropical climate, night temperature normally 15-20°C  
HOT TROP = Hot tropical climate, night temperature normally over 20°C  
LONGER DAY = More than 12 1/2 hours of effective daylight  
SHORTER DAY = Less than 10 1/2 hours of effective daylight

Y = Adapted

N = Not adapted

### References:

5. Lang, A. 1952. Physiology of flowering. Am. Rev. Pl. Physiol. (USA). 3:265-306.
6. Purohit, A.N. 1970. The qualitative and quantitative photoperiodic response of Indian potato varieties. New Physiologist (UK). 69(2):521-527.

## 12. Comments

Resistance data not found in the separate columns of the chart are provided, along with synonyms, collector numbers, and other general information.



Addendum to page 22

**7a. Sprout color**

**A. Predominant sprout color**

1. White-green
2. Pink
3. Red
4. Violet
5. Purple
6. Other

**B. Secondary sprout color**

0. Absent
1. White-green
2. Pink
3. Red
4. Violet
5. Purple
6. Other

**C. Distribution of secondary sprout color**

0. Absent
1. At the base
2. At the apex
3. Lightly scattered throughout
4. Heavily scattered throughout
5. Other