

The German Maize Collection



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- Short Introduction of IPK
- German Genebank Collection
- Maize Collection of IPK





Member of the
Leibniz
Leibniz Association

Leibniz Institute of Plant Genetics and Crop Plant Research



The German Genebank in Gatersleben



Inventory	Total number of acc.	Cultivation/no of accessions
Cereals and Grasses	65,448	2,494
wheat	28,111	769
barley	23,245	771
maize	1,536	26
Legumes	28,066	1,436
beans (<i>Phaseolus</i>)	9,146	283
peas	5,295	180
Vegetable	18,794	2,556
tomatoes	3,544	90
onions	3,319	1,421
beet/ <i>Beta</i>	2,320	180
Oil/Fibreplants	7,998	928
rapeseed	2,472	134
flax	2,324	104
Medicine/Spice Plants	8,344	1,476
Mutants	1,771	266
Forage crops	11,786	1,410
forage grasses	10,441	1,115
Potatoes	6,060	2,991
Total	151,002	13,557



151,002 accessions

3,212 species

776 genera



Reference collections

415,888 herbarium sheets

100,096 seeds & fruits

52,249 cereal spikes



Seed Storage



Cold Storage at $-18\text{ }^{\circ}\text{C}$ (active and base sample);
seed humidity $< 10\%$ (ca. 7%)

Svalbard Global Seed Vault



Svalbard Image Gallery (<http://www.croptrust.org/main/arctic.php?itemid=217>)



**Storage of safety
duplicates
of the German
genebank**

**54,211 accessions
(368 maize acc.)**



Genebank Information System (GBIS)



http://gbis.ipk-gatersleben.de/gbis_i/



CERTIFICATE



This is to certify that



Leibniz-Institut für Pflanzengenetik und Kulturpflanzenforschung (IPK)

Corrensstraße 3
06466 Seeland, OT Gatersleben
Germany

with the organizational units/sites as listed in the annex
has implemented and maintains a **Quality Management System**.

Scope:
Research and Service on Plant Genetic Resources

Through an audit, documented in a report, it was verified that the management system fulfills the requirements of the following standard:

ISO 9001: 2015

Certificate registration no.	372545 QM15
Valid from	2019-03-31
Valid until	2022-03-30
Date of certification	2019-03-15



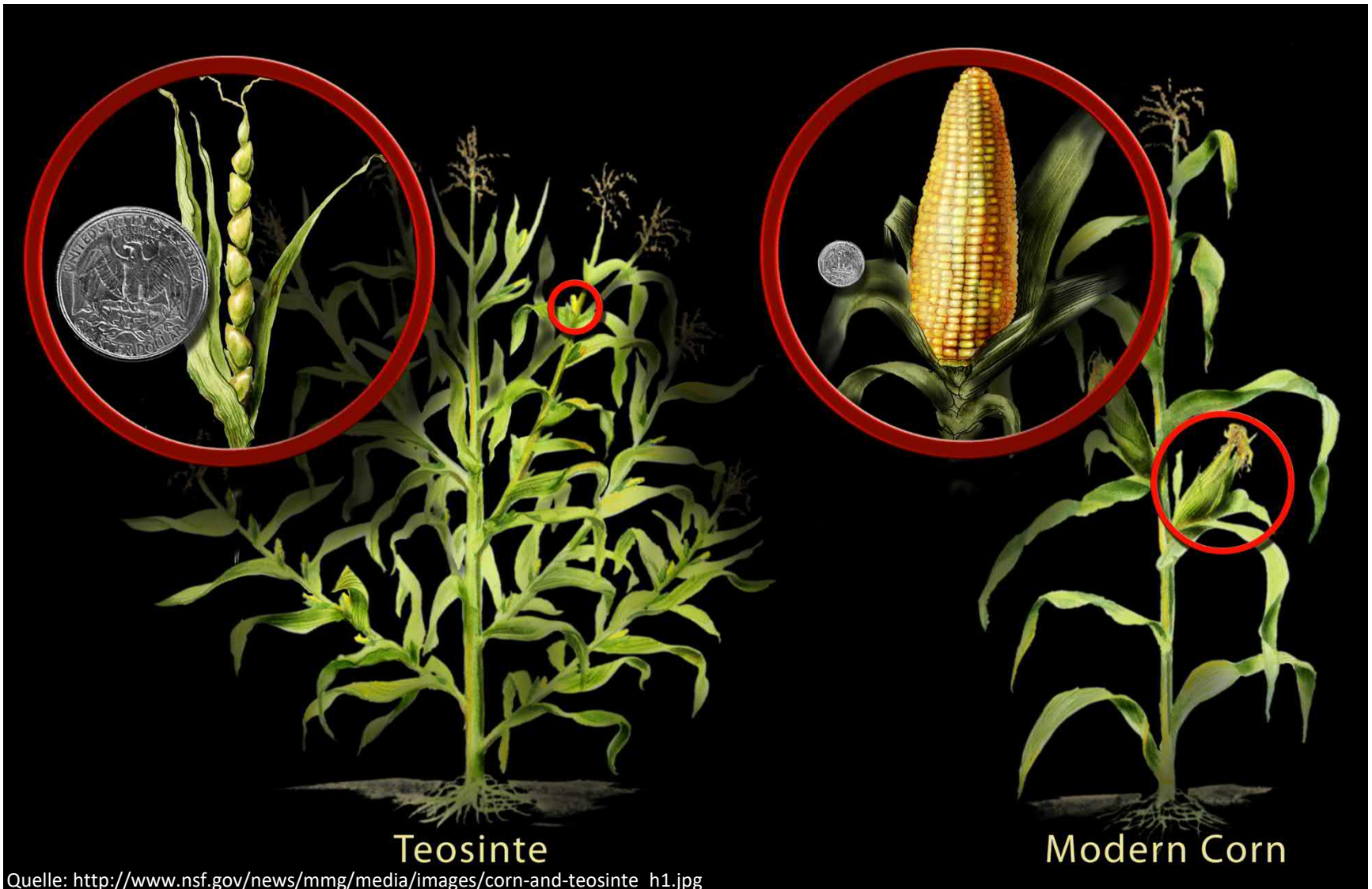
DQS GmbH

Stefan Heinloth
Managing Director

Quality Management System

Certification according to ISO 9001:2015

Wildtype and cultivated type



Quelle: http://www.nsf.gov/news/mmg/media/images/corn-and-teosinte_h1.jpg

Maize Collection

1,499 acc. *Zea mays* L.

6 acc. *Zea mexicana* (Schrad.) Kuntze

2 acc. *Zea perennis* (Hitchc.) Reeves & Mangelsd.

28 acc. *Coix lacryma-jobi* L.

1 acc. *Tripsacum dactyloides* (L.) L.

7 acc. wild material (biostatus 100)

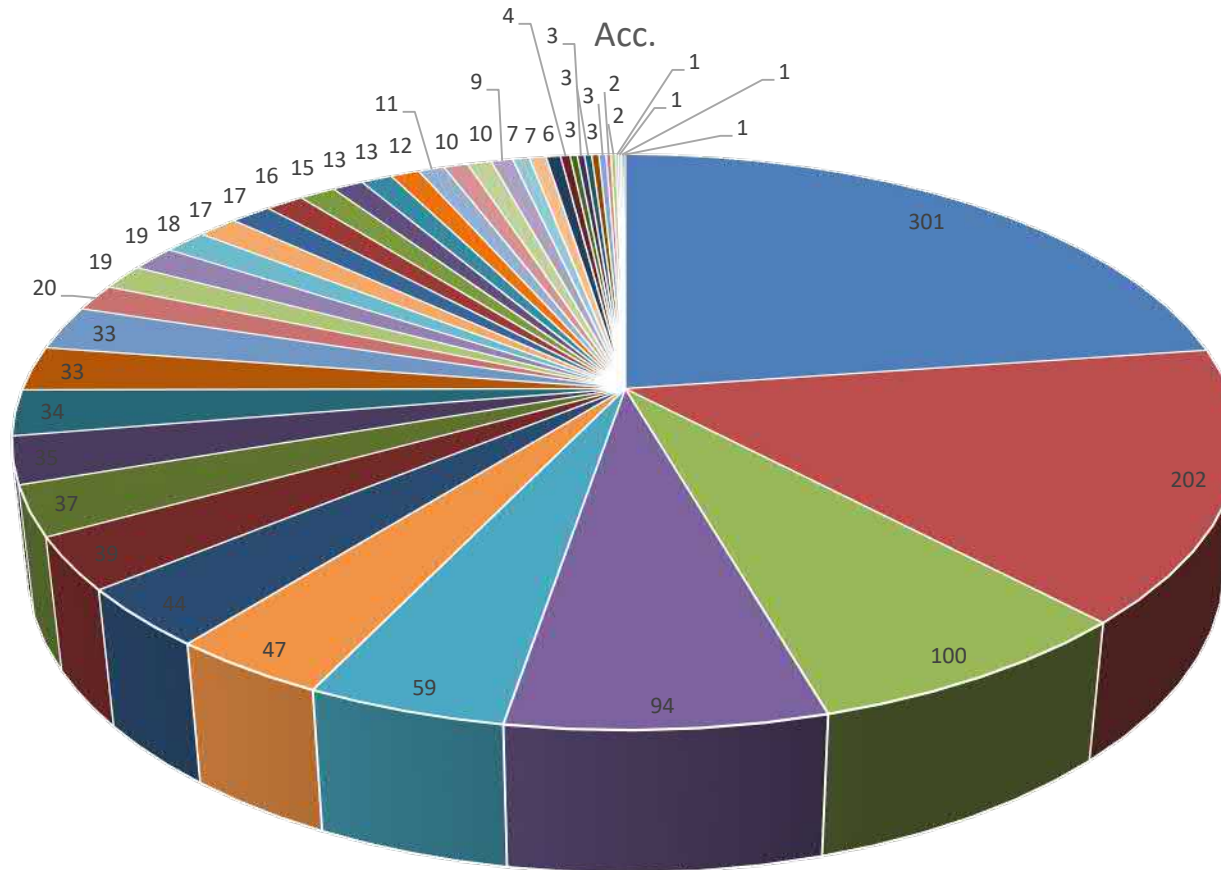
1,124 acc. landraces (biostatus 300)

67 acc. breeding lines (biostatus 400)

322 acc. advanced cultivars (biostatus 500)

16 acc. unknown

Countries of origin



- GEO ■ ITA ■ ALB ■ ROU ■ PRK ■ SUN ■ CUB ■ DEU ■ BGR ■ HRV ■ HUN
- CHN ■ GRC ■ AUT ■ CSK ■ YEM ■ POL ■ MEX ■ USA ■ CZE ■ ESP ■ DDR
- YUG ■ LBY ■ COL ■ PER ■ SVK ■ TUR ■ FRA ■ RUS ■ CAN ■ JPN ■ GBR
- IRQ ■ MAR ■ MKD ■ TUN ■ PRT ■ UKR ■ BLR ■ CHL ■ ECU ■ SYR

51 acc. from Germany (13 from former GDR)

11 landraces (biostatus 300)

12 breeding lines (biostatus 400)

27 advanced cultivars (biostatus 500)

1 unknown

ACCENAME	ACQDATE
Braunes Schindelmeiser	1949----
Caspersmeyer II	1947----
Caspersmeyer II	2002----
Caspersmeyers Silozahnmais	1947----
Chiemgauer	1948----
Chiemgauer	2002----
Dippes Zuckermais	1947----
Erdbeermais	1978----
Gelber Badischer Landmais	1956----
Gelber Badischer Landmais	1983----
Janetzki's Astra	1949----
Janetzki's Gloria	1947----
Mahndorfer	1949----
Mahndorfer	2000----
Mahndorfer Mais	1959----
Mahndorfer Mais	2002----
Mecklenburger	1947----
Mecklenburger	1959----
Neuzucht Kaatz	1959----
Petkuser	1963----
Petkuser	2002----
Pfarrkirchner	1949----
Rimpaus früher Binder	1947----
Rimpaus früher Binder	2002----
Rottaler Silomais	1947----
Schindelmeiser	2000----
Strenzfelder	1959----
Strenzfelder	2000----
Strenzfelder	2002----

Reproduction (open field, isolation by distance)



Protocol of Reproduction

species	month of sowing	preculture	life form	pollination
Maize (<i>Zea mays</i>)	April/May	not necessary	summer annual	cross
Job's Tears (<i>Coix</i>)	April/May	not necessary	summer annual	cross

species	isolation	location	floor space	protection from birds
maize	distance/ bagging/ small greenhouse	field/ green- house	10 – 20 m ²	kite/scarecrow
Job's Tears	small greenhouse	green- house	5 – 10 m ²	not necessary

species	method of harvest	first cleaning	second	third
maize	picking	hand sorting	-	-
Job's Tears	cutting	air separating	thieving	hand sorting

Characterization

Revision of/du/von TG/2/4
Correction included/Rectificatif inclus/
Berichtigung eingearbeitet



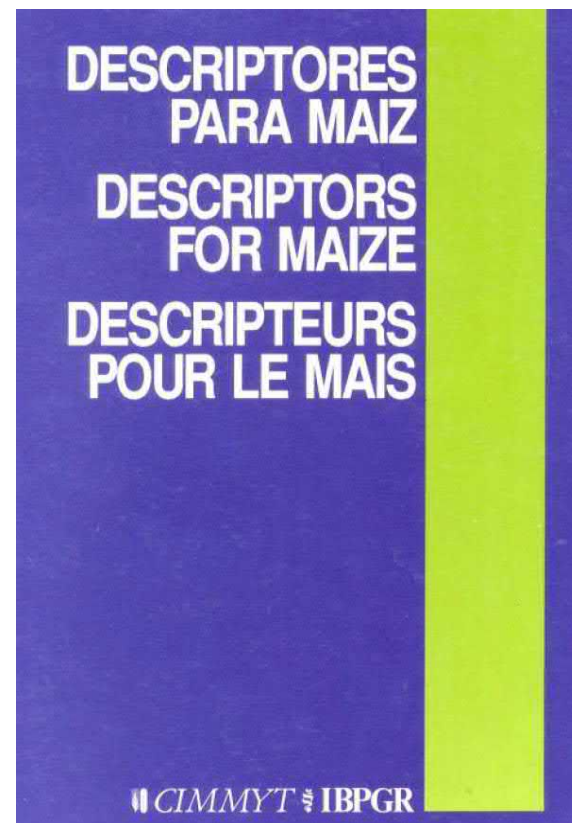
TG/2/6 + Corr.
Original: English/anglais/englisch
Date/Datum: 1994-11-04 + 1999-11-24

INTERNATIONALER VERBAND
ZUM SCHUTZ VON
PFLANZENZÜCHTUNGEN

UNION INTERNATIONALE
POUR LA PROTECTION
DES OBTENTIONS VEGETALES

INTERNATIONAL UNION
FOR THE PROTECTION OF
NEW VARIETIES OF PLANTS

MAIZE
MAIS
MAIS
(Zea mays L.)



Adapted version for IPK

Taxonomic Determination

Kul'turnaja flora SSSR, Vol. 6, 1982



Taxonomic Determination

Zea mays L.

subsp. *amylacea* (Sturtev.) Zhuk. – soft corn (Stärkemaïs)

subsp. *ceratina* (Kuleshov) Zhuk. – waxy corn (Wachsmais)

subsp. *everta* (Sturtev.) Zhuk. – pop corn (Puffmaïs)

subsp. *indentata* (Sturtev.) Zhuk. – dent corn (Zahnmaïs)

subsp. *indurata* (Sturtev.) Zhuk. – flint corn (Hartmaïs)

subsp. *saccharata* (Körn.) Zhuk. – sweet corn (Zuckermaïs)

subsp. *tunicata* (A.St.-Hil.) Zhuk. – pod corn (Spelzmaïs)

&

many varieties

Photo Documentation



subsp. *everta* (Sturtev.) Zhuk.



subsp. *saccharata* (Körn.) Zhuk.
var. *flavodulcis* Körn.



subsp. *indurata* (Sturtev.) Zhuk.
var. *aurantiaca* Kuleshov & Kozhukhov



subsp. *indurata* (Sturtev.) Zhuk.
var. *caesia* Alef.

Zea mexicana (Schrad.) Kuntze - Teosinte



Sample Availability

- Convention of Biological Diversity
- International Treaty for Plant Genetic Resources of Food and Agriculture (Annex1 species)
Maize accessions are part of the Multilateral System
- Standard Material Transfer Agreement
- Nagoya Protocol
- Breeders rights
- Special agreements



The International Treaty on Plant Genetic Resources for Food and Agriculture was adopted by the Thirty-First Session of the Conference of the Food and Agriculture Organization of the United Nations on 3 November 2001.

The Treaty aims at:

- Recognizing the enormous contribution of farmers to the diversity of crops that feed the world;
- Establishing a global system to provide farmers, plant breeders and scientists with access to plant genetic materials;
- Ensuring that recipients share benefits they derive from the use of these genetic materials with the countries where they have been originated.

List of crops covered under
the Multilateral System

Crop	Genus	Observations
Barley	Hordeum	
Sweet Potato	Ipomoea	
Grass pea	Lathyrus	
Lentil	Lens	
Apple	Malus	
Cassava	Manihot	Manihot esculenta only.
Banana / Plantain	Musa	Except Musa textilis.
Rice	Oryza	
Pearl Millet	Pennisetum	
Beans	Phaseolus	Except Phaseolus polyanthus.
Pea	Pisum	
Rye	Secale	
Potato	Solanum	Section tuberosa included, except Solanum phureja.
Eggplant	Solanum	Section melongena included.
Sorghum	Sorghum	
Triticale	Triticosecale	
Wheat	Triticum et al.	Including Agropyron, Elymus, and Secale.
Faba Bean / Vetch	Vicia	
Cowpea et al.	Vigna	
Maize	Zea	Excluding Zea perennis, Zea diploperennis, and Zea luxurians.

Passport data in EURISCO

- Four standard searches:
 - Taxonomy
 - Accession
 - Biological status
 - Collecting site
- Advanced search
- Different user-specific export features
- AEGIS Flagging

The screenshot displays the EURISCO (European Register of Invasive and Rare Species) website interface. The header includes the EURISCO logo and navigation links. The main content area is titled 'Passport data' and features a sidebar with navigation options like 'National inventory', 'Holding institute', 'Accession', 'Taxonomy', 'Acquisition/storage', 'Collection', 'Donor', 'Breeder', and 'Other'. The 'Collection' section is expanded, showing detailed passport information for specimen 382014 A, collected at the Portuguese Bank of Plant Germplasm in Braga, Portugal, in 2014. The data includes the collecting institute code (PRT001), date (2014-03-29), latitude (40.338611), longitude (-7.130956), and elevation (872). A map of the collection site is also visible. The right sidebar contains search and update options.

Weise et al. (2017) *Nucleic Acids Research*, 45(D1):D1003-D1008.

Criteria for AEGIS accessions at IPK

- Accessions with origin Germany, Germany cultivars;
- Accessions collected by German or Austrian collectors before 1945;
- Accessions collected by IPK staff; in the case of collecting missions after 1993 – when CBD entered into force – only those accessions that have been collected under a material transfer agreement;
- Material collected by ‘foreign missions’ and donated to IPK.
- Wild material, landraces, mutants
- Material must be freely available, legal status.

Thank you very much for your attention!

