



MORPHOLOGICAL DESCRIPTOR

MAIZE
Zea mays L.



Federal Seed Certification & Registration Department
Ministry of Food, Agriculture & Livestock
Government of Pakistan, Islamabad

*Testing Genetic Suitability and Adaptability: and
Registration of Crop Varieties is Legal Obligation
under Section 8 of Seed Act, 1976.*

Dr. M. Ashraf Tajammal
Ms. Naheed Naz

GENERAL

Variety name

Parentage

Pedigree

Breeder (s)

Breeding center/institute

Variety maintainer

Comparable variety (s)

Origin Local Exotic

Breeding method Selection Hybridization Introduction Any other

Areas of adaptation

Type of variety Fe. inbred Male inbred Hybrid Synthetic Composit

Maturity duration Short Medium Long

Sowing time

SEEDLING CHARACTERISTICS

Seedling length (cm)

Coleoptile's anthocyanin Absent Weak Medium Strong

First leaf color Green Dark green Other

First leaf tip Pointed Obtuse Round

First leaf length (mm)

First leaf width (mm)

PLANT CHARACTERISTICS FOR INBRED LINES ONLY

Plant length up to flag leaf Short Medium Long
(<120 cm) (120-150) (>150 cm)

PLANT CHARACTERISTICS FOR HYBRIDS AND OPEN POLLINATED VARIETIES ONLY

Plant length up to flag leaf Short Medium Long
(<150 cm) (150-180) (>180 cm)

STEM CHARACTERISTICS

Stem length (cm) [Range.....]

Taller than (Cultivar)

Shorter than (Cultivar)

Internode length (cm)

Internode diameter (cm)

Mid node anthocyanin

Stem tillering Absent Present

Stem anthocyanin coloration Absent Present
of brace roots

LEAF CHARACTERISTICS

Leaf angle between blade and stem (on leaf just above upper ear) Small (<45°) Wide (>45°)

Leaf attitude of blade (on leaf just above upper ear) Straight Drooping

Leaf width of blade (leaf of upper ear) Narrow (<8 cm) Medium (8-9 cm) Broad (>9 cm)

TASSEL CHARACTERISTICS

50% Tassel emergence (Days) [Range.....]

50% Tassel emergence (Days) V. early (<45 days) Early (45-50 days) Medium (50-55 days) Late (>55 days)

Morphological Descriptor

Maize

Anthocyanin coloration at base of glume (in middle third of main axis)	<input type="checkbox"/> Absent	<input type="checkbox"/> Present		
Anthocyanin coloration of glume excluding base (in middle third of main axis)	<input type="checkbox"/> Absent	<input type="checkbox"/> Present		
Angle between main axis and lateral branches (in lower third of tassel)	<input type="checkbox"/> Narrow	<input type="checkbox"/> Wide		
Attitude of lateral branches (in lower third of tassel)	<input type="checkbox"/> Straight	<input type="checkbox"/> Curved	<input type="checkbox"/> Strongly curved	
Anthocyanin coloration of anthers (in middle third of main axis on fresh anthers)	<input type="checkbox"/> Absent	<input type="checkbox"/> Present		
Density of spikelets (in middle third of tassel)	<input type="checkbox"/> Sparse	<input type="checkbox"/> Dense	<input type="checkbox"/>	<input type="checkbox"/>
Tassel angle between main axis and lateral branches (in lower third of tassel)	<input type="checkbox"/> Narrow (<45)	<input type="checkbox"/> Wide (>45)		
Earlier than	.....	(Cultivar)		
Later than	.....	(Cultivar)		
Tassel length (cm)	.....	[Range.....]		
Tassel stalk length (cm)	.....	[Range.....]	(Top leaf node to basal branches)	
Exsertion above flag leaf (cm)	.....		
No. of lateral branches	.....		
Lateral branch density	<input type="checkbox"/> Lax	<input type="checkbox"/> Semi dense	<input type="checkbox"/> Dense	

FLOWER CHARACTERISTICS

Anther fertility	<input type="checkbox"/> Normal	<input type="checkbox"/> Male sterile		
Pollen shedding	<input type="checkbox"/> Light	<input type="checkbox"/> Medium	<input type="checkbox"/> Heavy	
Anther color	.....		
Pollen color	.....		
Glume color	<input type="checkbox"/> Yellow	<input type="checkbox"/> Pink	<input type="checkbox"/> Red	<input type="checkbox"/> Purple <input type="checkbox"/> Green

EAR CHARACTERISTICS (UPPER EAR)

50% Silk emergence (days)		[Range.....]		
Earlier than	.....	(Cultivar)		
Later than	.....	(Cultivar)		
Silk color	<input type="checkbox"/> Green	<input type="checkbox"/> Yellow	<input type="checkbox"/> Pink	<input type="checkbox"/> Red <input type="checkbox"/> Mix
Insertion height (cm)	.....	[Range.....]		
Peduncle length (cm)	.....	[Range.....]		
Ear leafy extension	<input type="checkbox"/> Absent	<input type="checkbox"/> Short	<input type="checkbox"/> Medium	<input type="checkbox"/> Long
Ear husk length	<input type="checkbox"/> Short	<input type="checkbox"/> Medium	<input type="checkbox"/> Long	
No. husk blades	.....		
Ear shape	<input type="checkbox"/> Conical	<input type="checkbox"/> Conico cylindrical	<input type="checkbox"/> Cylindrical	
Ear length (cm)	.....	[Range.....]		
Ear diameter (cm)	.....	[Range.....]		
Seed rows/ear	.....		
Seeds/row	.....		
Seed row arrangement	<input type="checkbox"/> Straight	<input type="checkbox"/> Spiral	<input type="checkbox"/> Irregular	
No. of ears/plant	<input type="checkbox"/> 1	<input type="checkbox"/> 1-2	<input type="checkbox"/> 2-3	
Ear weight (g)	.....		
Cob color	<input type="checkbox"/> White	<input type="checkbox"/> Pink	<input type="checkbox"/> Mixed	

SEED CHARACTERISTICS

Seed color	<input type="checkbox"/> White	<input type="checkbox"/> Yellow	<input type="checkbox"/> Orange	<input type="checkbox"/> Redish	
Seed tip color	.....			
Color of sides	.....			
Seed shape	<input type="checkbox"/> Shrunken	<input type="checkbox"/> Round	<input type="checkbox"/> Indented	<input type="checkbox"/> Toothed	<input type="checkbox"/> Pointed
Seed length (mm)	.....			
Seed width (mm)	.....			
Seed thickness (mm)	.....			
Seed type	<input type="checkbox"/> Flint	<input type="checkbox"/> Semi flint	<input type="checkbox"/> Semi dent	<input type="checkbox"/> Dent	
Seed wax	<input type="checkbox"/> Absent	<input type="checkbox"/> Present			
Seed size	<input type="checkbox"/> Small	<input type="checkbox"/> Medium	<input type="checkbox"/> Bold		
Seed weight/ear (g)	.....			
000, Seed weight (g)	.....			
Grain:Cob ratio	.....			
Yield/ha. (mt)	.....			
Seed sweetness	<input type="checkbox"/> Absent	<input type="checkbox"/> Present			
Seed waxiness	<input type="checkbox"/> Absent	<input type="checkbox"/> Present			
Seed opaqueness	<input type="checkbox"/> Absent	<input type="checkbox"/> Present			

ENVIRONMENTAL ADAPTABILITY (Evaluation done under define conditions)

Flowering Response to seasons Stable Variable Highly variable

Drought tolerance Least tolerant Medium Most tolerant
(Measured as reduction in yield).

Tolerance to salinity Least tolerant Medium Most tolerant
(Measured by reduction in plant height 30 days after sowing).

Tolerance to acid soils Least tolerant Medium Most tolerant
(Measured as reduction in plant height 30 days after sowing).

Cold tolerance Least tolerant Medium Most tolerant
(Measured as reduction in general vigour and productivity after being continuously exposed to an average temperature of 15 °C for at least 15 days).

Heat tolerance Least tolerant Medium Most tolerant
(Measured as yield reduction when continuously exposed to average of 40 °C during the flowering period).

RESISTANCE TO INSECTS/PESTS

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RESISTANCE TO DISEASES

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DISTINGUISHING CHARACTERISTICS

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.....

RECOMMENDED/APPROVED BY

Variety Evaluation Committee (VEC)	<input type="checkbox"/> Yes	<input type="checkbox"/> No
Experts Sub Committee	<input type="checkbox"/> Yes	<input type="checkbox"/> No
Provincial Seed Council	<input type="checkbox"/> Yes	<input type="checkbox"/> No

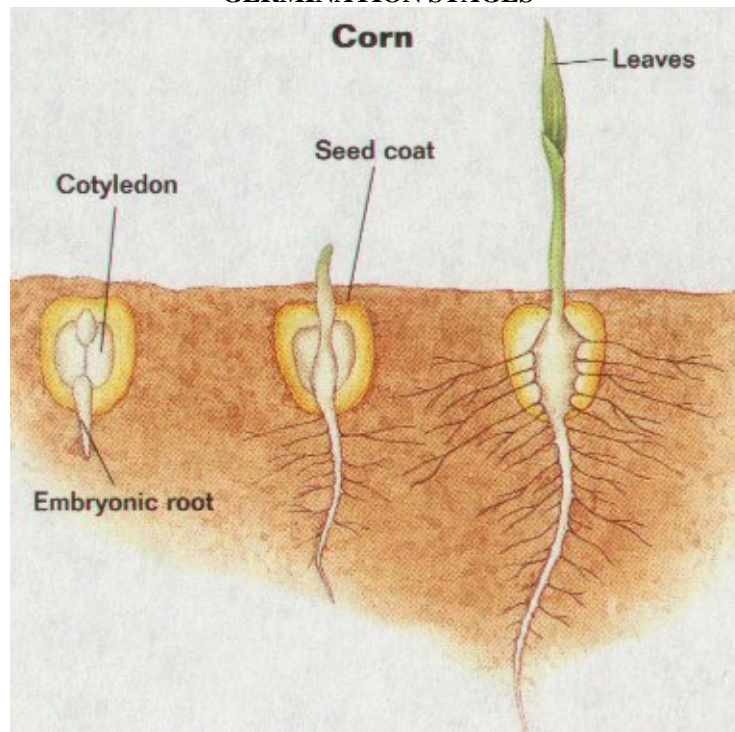
COMMENTS OF SPOT EXAMINATION

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ADDITIONAL INFORMATION

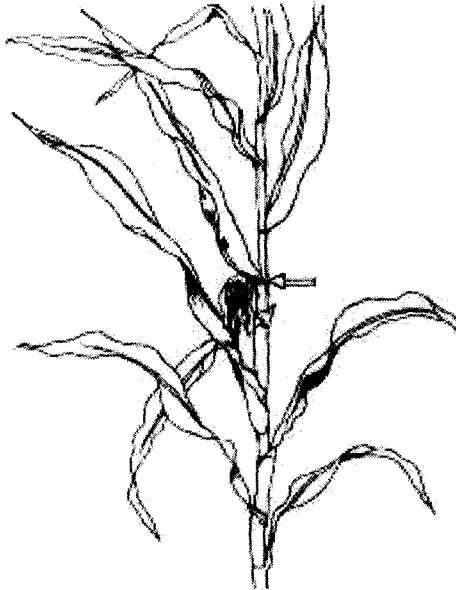
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GERMINATION STAGES



Maize roots

LEAF: ANGLE BETWEEN BLADE AND STEM
(on leaf just above upper ear)

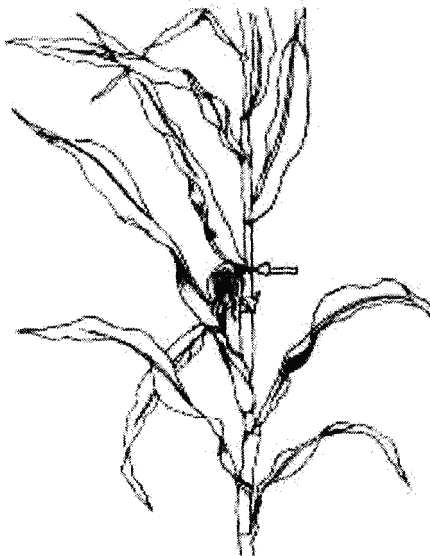


Small



Wide

LEAF: ATTITUDE OF BLADE
(on leaf just above upper ear)



Straight



Drooping

**TASSEL: ANTHOCYANIN COLORATION AT BASE OF GLUME
(in middle third of main axis)**



Absent

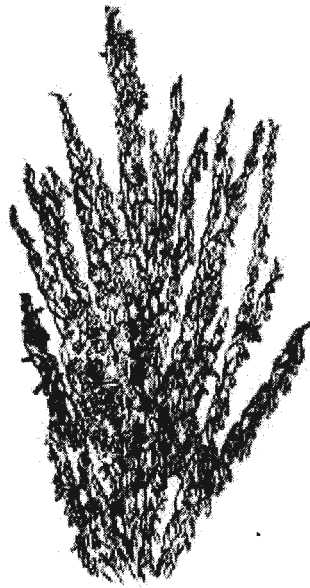


Present



Maize Tassel

TASSEL: ANGLE BETWEEN MAIN AXIS AND LATERAL BRANCHES
(in lower third of tassel)

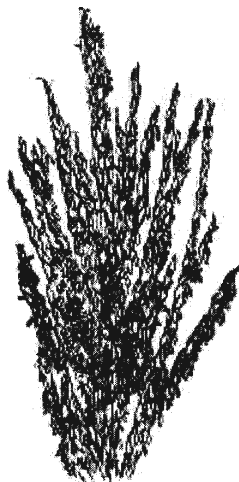


Narrow

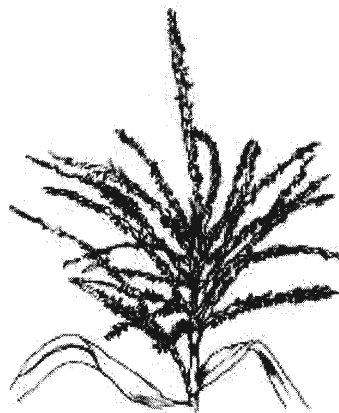


Wide

TASSEL: ATTITUDE OF LATERAL BRANCHES
(in lower third of tassel)



Straight



Curved

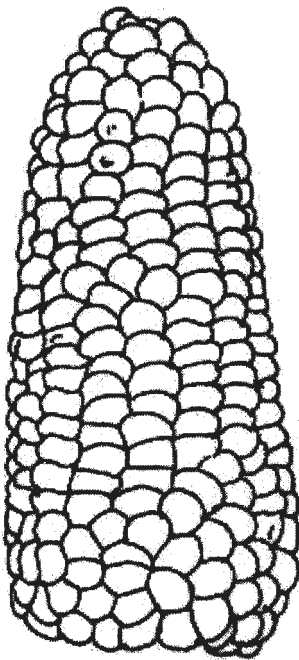


Strongly curved

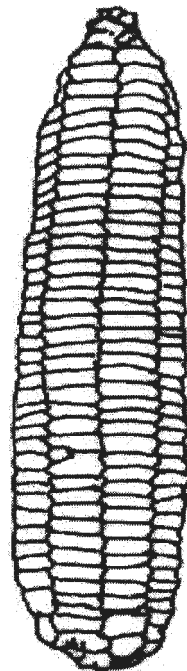


EARS

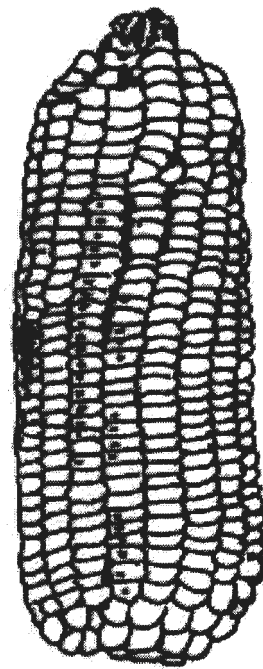
EAR SHAPE



Conical

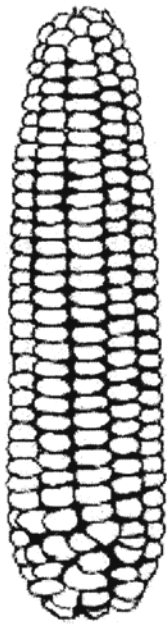


Conico-cylindrical

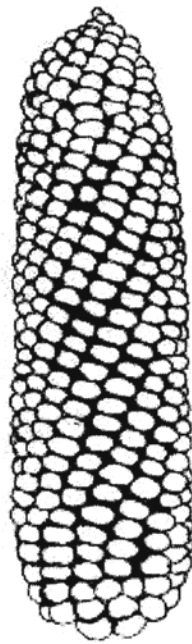


Cylindrical

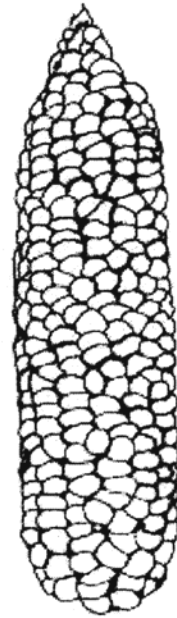
SEEDROW ARRANGEMENT



Straight



Spiral



Irregular

SEED COLOR



White



Yellow



Orange

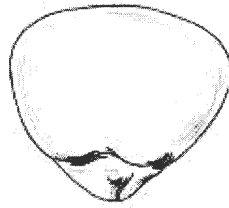


Redish

SEED SHAPE



Shrunk



Round



Indented



Toothed



Pointed