MORPHOLOGICAL DESCRIPTOR

COTTON (*Gossypium* 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	□ Upland □ Desi □ Upland Hybrid
Days to maturity	……. [Range…….]
Maturity	□ Early □ Medium □ Late
Earlier than	……. (Cultivar)
Later than	……. (Cultivar)
Days to opening	……. [50% boll splitting]

SEEDLING CHARACTERISTICS

Seedling length (cm)	……..
Seedling color	□ L. green □ Green □ Dark green
Foliage spot	□ Absent □ Present

PLANT CHARACTERISTICS

Growth habit	□ Compact □ Medium compact □ Spreading □ Bushy
Plant height (cm)	…….
Plant shape	□ Cylindrical □ Conical □ Spreading
Fruiting branch type	□ Normal □ Short □ Cluster
Monopodia attitude	□ Erect □ Semi erect □ Horizontal
Sympodia attitude	□ Erect □ Semi erect □ Horizontal
Nodes to Ist monopodia	…….
Monopodia/plant	…….
Sympodia/plant	…….
Stem pigmentation	□ Weak □ Medium □ Strong
Stem tip hairiness	□ Absent □ Sparse □ Medium □ Profuse
Bud gossypol	□ Glandless □ Low □ Normal □ High

LEAF CHARACTERISTICS

Foliage density	□ Sparse □ Intermediate □ Dense [at bolling]
Leaf color	□ Light green □ Green □ Dark green □ Light red □ Dark red
Leaf length (cm)	…….
Leaf width (cm)	…….
Petiole length (cm)	…….
Petiole anthocyanin	□ Absent □ Present
Leaf attitude	□ Erect □ Semi erect □ Horizontal
Leaf type	□ Normal □ Semi okra □ Okra □ Lanceolate
Leaf appearance	□ Cup □ Flat
Leaf nectaries	□ Absent □ Present
Leaf hairiness	□ Absent □ Sparse □ Medium □ Profuse

FLOWER CHARACTERISTICS

Days to flowering	……. (50% flowering)
Flowering duration	□ Short □ Medium □ Long
Flower size	□ Small □ Medium □ Large
Sepal pigmentation	□ Absent □ Present (at peak flowering)

Petal spot	□ Absent □ Present
Nectaries	□ Absent □ Present
Petal color	□ White □ Cream □ Yellow □ Pink □ Red □ Bicolor
Anther color	□ White □ Cream □ Yellow □ Red □ Purple
Stamen density	□ Lax □ Semi dense □ Dense
Position of stigma	□ Embeded □ Exserted
Stigma exsertion (mm)	…….
Stigma height (mm)	…….
Calyx size	□ Short & narrow □ Intermediate □ Large/broad

BOLL CHARACTERISTICS

Boll bearing habit	□ Solitary □ Cluster
Boll shape	□ Round □ Oval □ Conical
Boll color	□ Green □ Red
Boll size (Boll width at maximum point)	□ Small □ Medium □ Large
Beak size	□ V. short □ Short □ Medium □ Long □ V. long
Boll length (cm)	…….
Boll breadth (cm)	…….
Boll broad at	□ Base □ Lower mid □ Middle
Peduncle length (cm)	…….
Boll surface	□ Smooth □ Finely □ Roughly pitted
Gossypol	□ Glandless □ Low □ Normal □ High
Bracteole length	□ Short □ Medium □ Long □ V. long
Bracteole width	□ Narrow □ Medium □ Wide
Bolls/plant	……
Boll opening	□ Close □ Semi open □ Open
Boll weight (g)	…….
Yield (seed cotton) (kg/acre)	……/……
Yield (lint) kg/acre	……/……

SEED CHARACTERISTICS

Seed size	□ Small □ Medium □ Bold
Seed shape	□ Oblong □ Semi orbicular □ Obovate □ Ellipsoid
Seed length (mm)	……
Seed width (mm)	……
Seed index (g)	……
Seed coat color	□ Brown □ Dark brown
Seed fuzz	□ Fuzz less □ Semi fuzzy □ Fuzzy Densely fuzzy
Fuzz color	□ White □ Dusky white □ Green tinge □ Green tip
Oil content (%)	……

FIBRE CHARACTERISTICS

Fibre color	□ Shiny white □ White □ Cream □ Brownish □ Greenish
GOT/Lint (%)	……
Staple length (mm)	……
Fineness (micronaire)	……
Fiber strength (tppsi)	……
Lint index (g)	……
Uniformity (%)	……
Spinning index	……
Fibre length group	□ Short (20.6 mm)…□ Medium (20.6-25.4 mm) □ Medium long (26.2-27.7 mm) □ Long (28.5-33.3 mm)

ENVIRONMENTAL ADAPTABILITY (Evaluation done under define conditions)

Flowering Response to seasons	□ Stable	□ Variable	□ Highly variable
Drought tolerance (Measured as reduction in yield).	□ Least tolerant	□ Medium	□ Most tolerant
Tolerance to salinity (Measured by reduction in plant height 30 days after sowing).	□ Least tolerant	□ Medium	□ Most tolerant
Tolerance to acid soils (Measured as reduction in plant height 30 days after sowing).	□ Least tolerant	□ Medium	□ Most tolerant
Cold tolerance (Measured as reduction in general vigour and productivity after being continuously exposed to an average temperature of 15 °C for at least 15 days).	□ Least tolerant	□ Medium	□ Most tolerant
Heat tolerance (Measured as yield reduction when continuously exposed to average of 40 °C during the flowering period).	□ Least tolerant	□ Medium	□ Most tolerant

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)	□ Yes	□ No
Experts Sub Committee	□ Yes	□ No
Provincial Seed Council	□ Yes	□ No

COMMENTS OF SPOT EXAMINATION

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…….

ADDITIONAL INFORMATION

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METHODS AND OBSERVATIONS

The assessment of distinctness and stability observations should be made on 40 plants or parts of plants which should be divided among 4 replications (10 plants per replication). The number of apparent plant should not exceed 4 in 40.

For the assessment of uniformity of characteristics on the plot as a whole (visual assessment by a single observation of a group of plants or parts of plants), the number of aberrant plants or parts of plants should not exceed 8 in 150.

All leaf characteristics should be observed on 4^{th} leaf from the top.

IMPORTANT PLANT CHARACTERISTICS TO BE RECORDED

1. AT PEAK FLOWERING
Stem pigmentation, Stem tip hairiness, Leaf color, Petiole anthocyanin, Leaf type, Leaf appearance, Leaf nectarines, Leaf hairiness, Petal color, Anther color, Position of stigma

2. BEFORE BOLL BURSTING
Boll shape, Boll color, Boll size (Boll width at maximum point)

3. FIRST BOLL BURSTING
Boll bearing habit, Boll surface

4. FIRST PICKING
Boll opening, Boll weight (g), Staple length (mm)

5. FINAL PICKING
Plant height (cm)

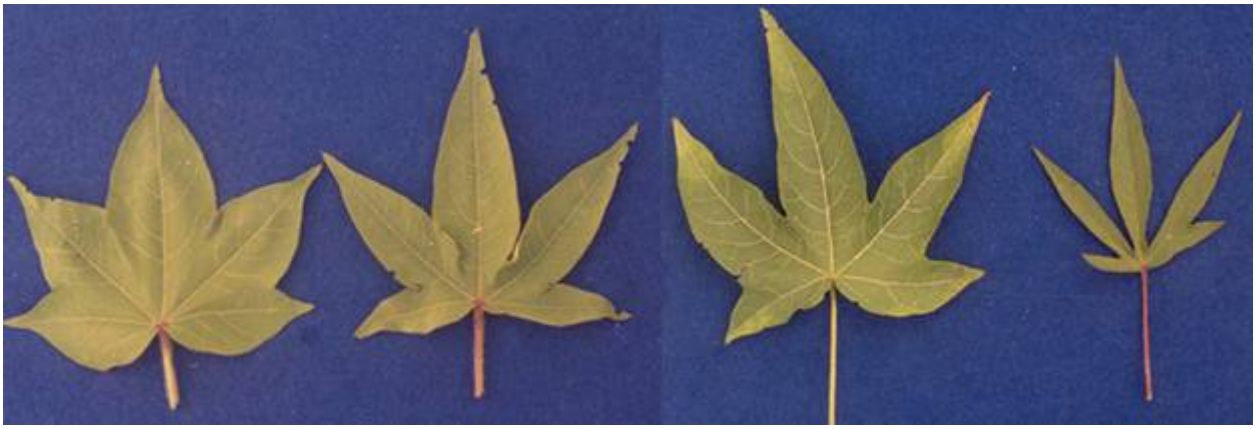
6. HARVEST MATURITY
Fuzz color, Fibre color, GOT/Lint (%), Fineness (micronaire), Fiber strength (tppsi), Uniformity (%)

7. AFTER GINNING
Seed Fuzz

PLANT SHAPE

Cylindrical Conical Spreading

LEAF SHAPE



Normal Semi okra Okra Lanceolate

BRACT TYPE

Normal

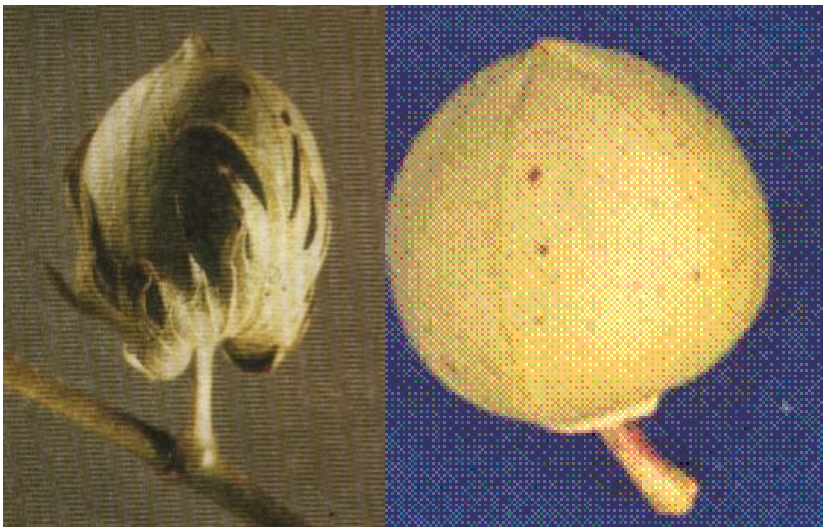
Frego

POSITION OF STIGMA

Embeded

Exserted

BOLL SHAPE



Round

Oval

Conical

BEAK SHAPE

Short

Long

BOLL OPENING

Close Semi open Open

SEED SHAPE

Oblong

Semi orbicular

Obovate

Ellipsoid

SEED FUZZ

Fuzz less

Semi fuzzy

Fuzzy

Densely fuzzy