

CHARACTERISTICS FOR IDENTIFICATION OF FINGER MILLET (*Eleusine coracana* (L.) Gaerin.) VARIETIES.

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Summary

Characteristics useful for identification of finger millet varieties namely; plant type, degree of tillering, colour of the vegetative and reproductive parts, s, colour of the grains, some characteristics of the spike, type of ear head, length and size of ear head, degree of tightness of packing of spike and grains, grains opened or closed by the glumes, yielding ability, number of days to mature, degree of resistance or susceptibility to the blast disease, degree of tolerance to lodging and shattering are briefly discussed.

Introduction

Finger millet or "kurakkan" had been grown traditionally in chenas since ancient times. Therefore it has several types that had been evolved and grown in farmers fields. Some types are pure and other types are mixed. However, most of the farmers are willing to grow the local types. Hence, the identification is useful to differentiate finger millet varieties from the mixed types.

Distinguished characteristics of finger millet.

Characteristics used to differentiate finger millet varieties are (1) plant type, (2) degree of tillering, (3) colour of the vegetative and reproductive parts (4) colour of the grains, (5) characteristics of the spike, (6) type of ear head, (7) length and size of ear head, (8) degree of tightness of packing of spike and grains, (9) grains opened or closed by the glumes, (10) yield, (11) number of days to mature, (12) degree of resistance or susceptibility to the blast disease (13) degree of tolerance to lodging and shattering.

(A) Plant type:

Varieties can be grouped into dwarf to tall, or plant types. The dwarf types are around 40 cm in height and tall types are 100 cm (one meter) in height (purseglove, 1978). Plant height is a specific character for the specific variety.

(B) Degree tillering

The degree of tillering varies from poor to profuse. The scale given is high (over 5) medium (3 to 5) and low (below 3) (Mahadevapa, 1965). However, the above parameter is difficult to take as a criteria because degree of tillering is influenced by the variety and also other factors such as plant density, weed population and fertilizer application etc.

(C) Colour of the vegetative and reproductive parts.

The purple pigment colour on the glumes appears at the full bloom stage and it is also visible on the stem. The purple colour is governed by a dominant gene (Krishna, 1931). When the purple pigment colour is not present the normal green colour appears. On the basis of the pigment colour, two finger millet groups can be easily identified.

(D) Colour of the grains.

Colour of the grains varies from orange red to orange, deep brown, purple to black (purseglove, 1978). The brown seed colour is a predominant grain colour and its pigment is seen in the outer layer of the seed coat and it is governed by a simple dominant factor. (Krishna, 1931).

(E) Characteristics of the spike

- i). Number of spikelets per spike
- ii). Length of the spikelets.
- iii). Incurving or straight of the spike.

Finger millet varieties can be divided into two groups whether the spike is incurving or straight. The incurving of the spike is a result of a dominant factor gene (Rao, 1932)

(F) Type of ear head

Ear head types are mainly divided into open, half open and compact types (Mehra, 1982). Some ear heads have branched fingers and resembles a cox comb. The recommended variety MI 302 and the local varieties are showing compact ear heads. (Fig.1,2) while the open ear heads are observed in most of the exotic types (Fig.3)

(G) Length and size of ear heads

Length and size of the primary ear head are also distinguished character of finger millet varieties (Fig.2,3). The scale given for length is long (over 13 cms) medium (9-12 cms) and short (below 9 cms). (Mahadevappa,1965). According to the scale the local cultivars and the recommended variety have short to medium size ear heads. However, exotic varieties have large ear heads.

(H) Degree of tightness of packing of spike and grains.

Tightness of packing of spike and grains are easily visible, and it varies from loose to tight. The crowding of the digital spike of finger millet is a condition governed by a dominant factor (Rao, 1932)

(I) Grains exposed or covered by the glumes.

Most of the seed of finger millet varieties are covered by glumes and some varieties are partly covered or exposed.

(J) Yield ability

The yielding ability also varies from variety to variety. Some local varieties and the recommended variety MI 302 recorded nearly an equal grain yield. However, some exotic varieties significantly out yielded over the above varieties (Perera, 1986).

(K) Number of days to mature

Number of days to mature is also a distinguishable character of finger millet varieties. It normally ranged from 2½ month to 4½ month.

(L) Degree of resistance or susceptibility to the blast disease.

The blast disease caused by *pyricularia* sp. and the severity of the above disease is varied from resistance to susceptibility. The local varieties are somewhat tolerant to the disease but the exotic varieties are highly susceptible (Perera, 1986).

(M) Degree of tolerance to lodging.

The lodging tolerance may be used to distinguish some varieties. The varieties of MI 302 and Paallebedda selection are highly tolerant to lodging (Perera 1986) (86).

(N) Shattering.

Shattering losses are very little in many varieties whereas some varieties show generally high shattering.

These characteristics will be useful for identification of existing varieties of finger millet. Those who are involved in agricultural extension, research work, and finally the farmers will find it useful to be able to identify the Kurakkā varieties, that are grown in their areas.

