

FINGER MILLET

RAGI - *Eleusine coracana* Gaertn. (2n = 36)

(*Finger millet / Kezhvaragu / Keppai / Mutthair / Thamida / Nacheni / Mandal*)

Finger millet is an important staple food in parts of East and Central Africa, and India, particularly in Karnataka. It is used for malting and brewing.

Place of Origin : India

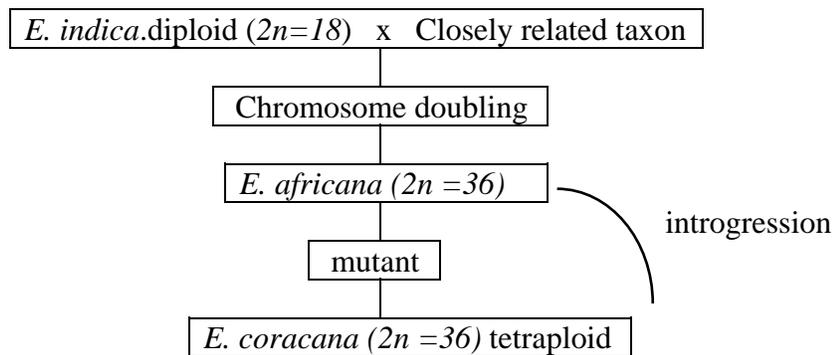
Classification : The genus *Eleusine* consists of eleven species. Of these six are diploids and five are tetraploids.

Eleusine indica is a diploid with $2n = 18$.

Eleusine coracana and *E.africana* are tetraploids ($2n = 36$)

Origin of cultivated species:

E. indica is considered as one of the parent for the tetraploid *E.africana*. *E.coracana* were mutants selected from of *E. africana*.



Hybridisation and introgression between *E.coracana* and *E.africana* continued and still continues in the highlands of Tropical Africa

Characters of *Eleusine*:

Inflorescence is contracted into a number of digitate spikes of spikelet. Spikelet consists of more than two florets subtended by two glumes.

Cultivated types of Ragi :

There are two cultivated types of ragi.

1.Indian ragi, *E. coracana* and 2.African ragi , *E. africana*.

African ragi : It has long fingers, bold grain, stiff straw, photo sensitive and uneven grain maturity phase.

Indian ragi : Short fingers, small grains, photo insensitive.

RAGI (Finger millet)
***Eleusine Coracana* (2n = 36)**

Origin :

According to Krishnaswamy(1952) the cultivated species of *E.coracana* arose as an allotetraploid from its wild relative *E.indica*. Asia and Africa are supposed to be place of origin. The African types are having bolder grain.

Wild relatives :

The genus Eleusine comprises of 11 species of which 6 are diploids and 5 are tetraploids.

1. *Eleusine indica*
2. *Eleusine oligostachya*
3. *E.tristachya*
4. *E. poranansis*
5. *E. jaegeri*
6. *E. flacifolia*

(2n = 36)

1. *Eleusine coracana*
2. *E. africana*
3. *E. longipoides*
4. *E. verticillata*
5. *E. cagopoides*

Breeding objectives :

1. Evolution of 80 days duration ragi suitable for irrigated conditions.
2. Breeding short duration drought resistant varieties suitable for rainsfed conditions
3. Breeding for high protein white ragi varieties suitable for malt making.
4. Blast resistant varieties.
5. Breeding varieties for sodic soils and tannery effluent affected soils.

Breeding techniques

1. By introduction

Indaf 5 Ragi from karnataka.

2. By selection

Pure line selection. Earlier varieties were all evolved by pure line selection.

Co7

Co11

Co12

Paiyur 1

TRY I

3. Hybridization and selection

The African types are with long fingers, bold grain with stiff straw. Further they are photosensitive and have an even grain maturity. Because of this character they are

not recommended for cultivation in India. The Indian types are with short fingers, small grains and photo insensitive. The African types are utilised in hybridization programme, to develop extra long fingered varieties coupled with disease and drought resistance. The Indian African cross derivatives are known as Indaf varieties which are interspecific.

Other state varieties

E.g. Indaf 5 cauvery x IE 929

Indaf 9

Tamil Nadu varieties

Co6 white ragi IS 1540 x EC 2985

Co9 white ragi

Co13 (Co7 x TAH 107)

4. Heterosis breeding :

Artificial induction of male sterility through use of gametocide, GA₃, 2-4-D are being attempted.

5. Mutation breeding : T20 - mutant from AKP - 7.