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Short Communication

TWO NEW LEAF MUTANTS IN CHICKPEA

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Apinnate mutant

The normal leaf shape in chickpeas is generally pinnate. However, leaf mutants obtained from induced mutations and from natural population in chickpeas include simple and multipinnate leaf. The present studies report a new spontaneous mutation in leaf shape. The mutant was identified in the multiplication plot of a cultivar BGD 85 at IARI field in 1995-96. The mutant was different from the pinnate leaves by the absence of pinnae on rachis (Fig. 1). However, a terminal asymmetric pinna was observed on each rachis and its size was approximately one and half times larger than the normal pinna of other pinnate plants of the same cultivar. The mutated plant may have tried to compensate the photosynthetic activity in absence of pinnae. The floral axis of the mutant was poorly developed and rudimantary as the floral whorls remained undifferentiated and comprised of leaf like structures. The mutant

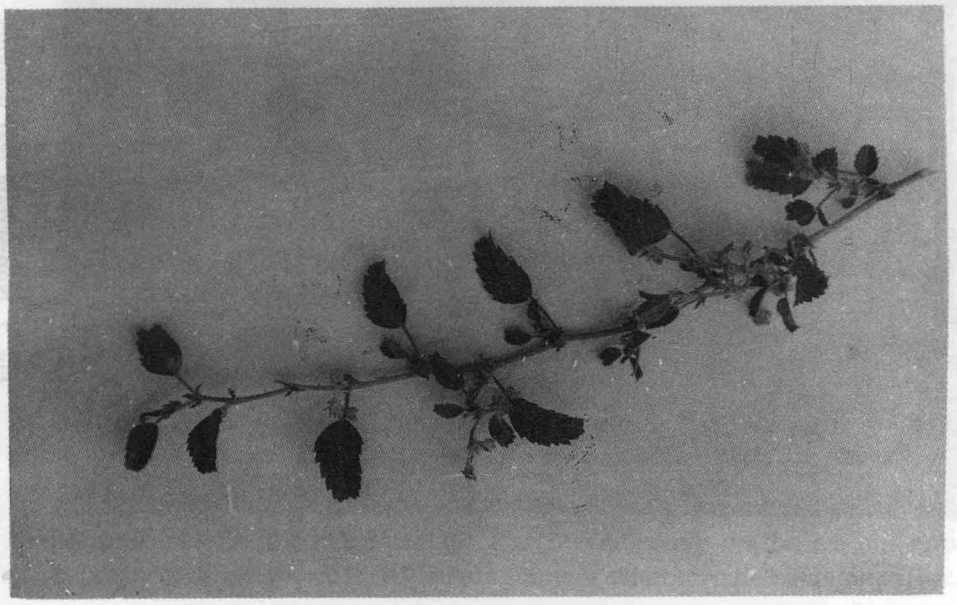

Fig. 1. Apinnate mutant

was completely sterile because the whorls of flower viz. calyx, corolla, androceium and gynoecium did not develop normally besides the normal leaves. It suggests the pleiotropic effect of the gene controlling the leaf whorl development. Such mutants could be a good experimental material for developmental studies, provided these can be spotted in more numbers in natural population.

Non-serrate leaf margins

A single plant was spotted in the population of BGD85 cultivar of chickpea during 1995-96 which was different from the other plants of population by its smooth leaf margins and oval in shape. The normal pinnate leaves have serrate leaf margins and ovate shape (Fig. 2) This type of leaf margin is proposed as non serrate leaf margin. The close scrutiny of the plant revealed the normal flowers but the translucent anthers. The pollen smears of these flowers with acetocarmine did not show mature and viable pollen. Since none of the early flowers developed into the pods, attempts were made to sib mate the mutant plant for maintenance of the mutants. However, these efforts failed to get the seed due to less number of flowers and a non favourable weather conditions. Since the mutant is lost without progeny, efforts are continued is isolate such mutants is the future generation of BGD85.

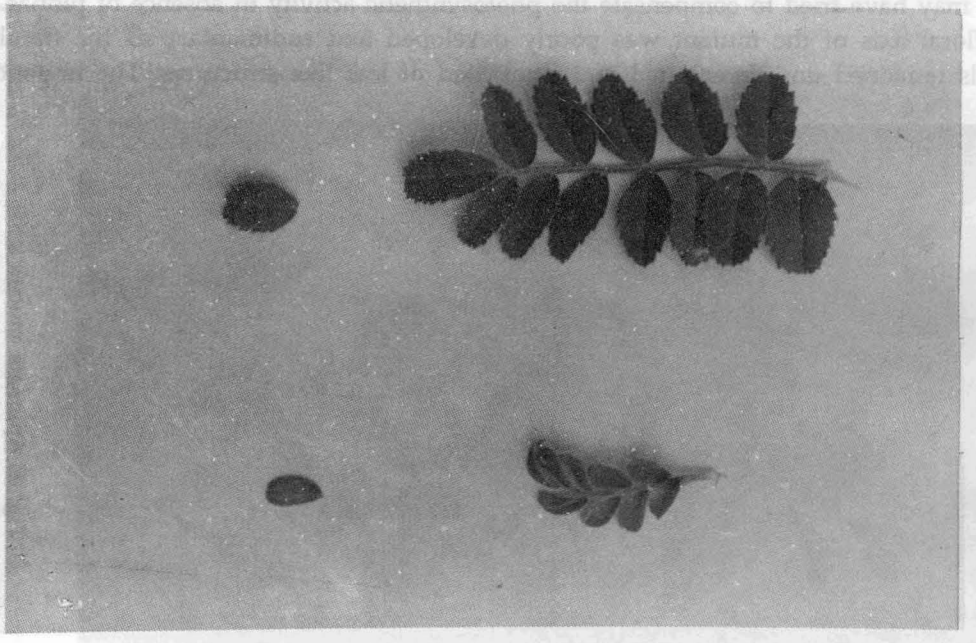

Fig. 2. Non-serrate leaf margins