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FLORAL BIOLOGY OF INDIAN LEMONGRASS *CYMBOPOGON FLEXUOSUS* STAPF

Indian lemongrass belongs to the genus *Cymbapogon* which comprises of about 40 species (Baily, 1971). It is the chief source of lemongrass oil which is high in citral content. The oil is used in perfumery, cosmetics, as a mosquito repellent and for the synthesis of vitamin A (Anon., 1950). This grass is extensively cultivated in the central and northern parts of Kerala. Research on varietal improvement is being conducted at the Lemongrass Research Station at Odakkali. However, due to the lack of basic knowledge of the reproductive structures of this grass, not much progress is achieved, in these lines. Hence the presentwork has been undertaken.

Seeds of the variety OD.19 collected from the Lemongrass Research Station, Odakkali were sown and a crop was raised during April 1976. Detailed observations on the floral biology such as the structure of the panicle, branching pattern and arrangement of spikes were made. The organisation of the individual spikes, i. e., the number of spikelets. the number of glumes, the number of flower in each spikelet etc. were also studied. A detailed study ofthe structure of the florets was also attempted.

Lemongrass, being a typical short day plant, starts flowering in December. The inflorescence is a terminal panicle consisting of a large number of lateral branches having a total length of about 150 cm. Each branch gives rise to a number of primary, secondary and tertiary branches ending ultimately in small paired spikes. Each pair of spikes is subtended by a small leafy bract. An inflorescence may contain as many as 3,000 to 4,000 spikes on an average. A spike consists of 5 to 11 spikelets in pairs of which one is sessile and the other pedicellate, attached to a thin zig-zag peduncle. The spikes terminate with spikelets in groups of three, of which the central one is sessile and the two laterals are pedicellate.

The sessile spikelet contains a single bisexual floret. It has 4 glumes. The first glume is the largest and is predominently veined. The second glume is veinless and the third is thin and transparent. The fourth glume is thin, transparent, bifid, hairy and has a long awn. This is the fertile glume. The floret consists of a pair of minute, fleshy lodicules, three stamens with short filaments and long basifixed anthers and the gynoecium which is monocarpellary, with bifid style ending in thick, feathery stigmas. The young stigmas are light pink and turn dark violet later.

The pedicellate spikelet contains a single staminate floret. It is awnless and has three glumes only. The first glume is large, thick and has prominent veins. The second glume is veinless and the third is transparent. The fourth glume is totally absent. The floret consists of two small fleshy lodicules and three stamens with short filaments and long basifixed anthers.

The arrangement of the spikelet in pairs of which one is sessile and the other pedicellate is as observed in sugarcane and sorghum. Likewise the termination of the

spikes in groups of three spikelets of which one is sessile and the others pedicellate, is also as seen in sorghum (Poelhman and Borthakur, 1969).

In both types of spikelets, the palea is absent. In the sessile spikelet, the third and fourth glumes are the lemmas, of which the first lemma is sterile and the second fertile bearing the bisexual floret in its axil. In the pedicellate spikelet, only the first lemma is present and this is fertile, bearing the male floret in its axil. The second lemma is suppressed. Moreover, the floret is staminate in the pedicellate spikelet as against bisexual in the sessile spikelet. This reduction of floral parts indicates the evolutionary advancement of the genus.

സംഗ്രഹം

ഇഞ്ചിപ്പുല്ലിന്റെ ഒരു പൂങ്കുലയിൽ ശരാശരി 3000 ffliwjJ 4000 വരെ സ്പൈക്കുകൾ കാണാം. ഇവ ജോഡികളായി സ്ഥിതിചെയ്യുന്നു. ഓരോ സ്പൈക്കിലും 5 മുതൽ 11 വരെ സ്പൈക്കികങ്ങൾ ഉണ്ട്. സ്പൈക്കികങ്ങളും ജോഡികളായി കാണപ്പെടുന്നു. ഓരോ ജോഡിയിലും ഒന്ന് അവൃന്തീയവും മറേത് വൃന്തീയവുമായിരിക്കും. അവൃന്തീയ സ്പൈക്കികത്തിൽ നാല് പോളകളും ഒരു ദ്വിലിംഗപുഷ്പവും അടങ്ങിയിരിക്കുന്നു. വൃന്തീയ സ്പൈക്കികത്തിൽ മൂന്ന് പോളകളും ഒരു ആൺപൂവും ഉണ്ടായിരിക്കും. അവൃന്തീയ സ്പൈക്കികങ്ങളിraft മാത്രം ഓവ് കാണപ്പെടുന്നു.

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