

Sources of Variation for Sponge Gourd Breeding

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Abstract—*Cucurbits form an important of vegetable crops and sponge gourd (*Luffa cylindrica* Roem.) is one of the important members of this group. Sponge gourd is native to Tropical Asia, probably India and South East Asia and has been cultivated for centuries in the Middle East and India, China, Japan and Malaysia. The tender fruits are consumed as vegetable which are highly nutritive and contains moisture of 93.2 g, protein 1.2 g, fat 0.20 g, carbohydrate 2.9 g, vitamins (thiamin 0.02 mg, riboflavin 0.06 mg, niacin 0.4 mg and carotene 120 mg), minerals (calcium 36 mg, phosphorus 19 mg and ferrous 1.1 mg) and fibers 0.20 g per 100 g of edible portion. The mature, dry fruit consists of a hard shell surrounding a stiff, dense network of cellulose fibers (sponge) which is a good source of fiber used in industries for filter and cleaning the motor car, glass wares, kitchen utensil, bath and body bathing accessories. Sponge gourd is an annual climber which generally possesses monoecious sex form. Being a highly cross pollinated crop its natural population has tremendous variability for fruit shape, size, colour, taste, etc. Keeping in view the importance and existence of wide variability in sponge gourd a total of 16 germplasm was evaluated during rainy season of 2013 for yield and other horticultural traits. Observed a wide range of variation for days taken to 50% female flowering (44.60-53.93), node number on which first fruit appeared (11.8-18.8), ovary length (4.2-5.6 cm), fruit length (10.8-19.5 cm), fruit diameter (2.9-3.4 cm), fruit weight (62.4-97.0 g) and number of marketable fruits per plant (21.20-35.53). Among the evaluated germplasm the AHSG-28, AHSG-29 and AHSG-34 were found promising in respect of earliness, fruit length and yield. Also identified a white seeded line of sponge gourd (AHSG-23) from the evaluated genetic stock. The existing variability in sponge gourd could be utilized to develop suitable cultivars/hybrids for ever changing agro climatic scenario.*