



Response of growth retardants on sex expression and fruit yield of bottle gourd [*Lagenaria siceraria* (Mol.) Standl.] cv. PUSA NAVEEN under South Gujarat conditions

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ABSTRACT

Field experiment was conducted during *Kharif* season at Regional Horticultural Research Station of Navsari Agricultural University, Navsari to evaluate the potentiality of various growth retardants. Ten treatments consisting of three types of growth retardants as well as three levels of concentrations *i.e.* paclobutrazol (PBZ) @ 25, 50 and 100 ppm, chlormequat (CCC) @ 250, 500 and 750 ppm and maleic hydrazide (MH) @ 100, 200 and 300 ppm were evaluated with check in randomized block design with three replications. Experimental result revealed that the first female flower was appeared at the lowest node (7.53) in vines treated with chlormequat 250 ppm, paclobutrazol 25 ppm (8.07), maleic hydrazide 200 ppm (8.67) and paclobutrazol 50 ppm (9.07). The number of days to first female flower appearance were significantly reduced by all the treatments over control. Minimum number of male flowers per vine (86.27) was recorded with the application of paclobutrazol 100 ppm followed by paclobutrazol 50 ppm (101.23), chlormequat 500 ppm (101.97), paclobutrazol 25 ppm (108.90), control (111.43) and maleic hydrazide 100 ppm (116.93). However, maximum number of female flowers (53.4) per vine was noticed with the treatment of chlormequat 250 ppm followed by paclobutrazol 25 ppm (51.1), maleic hydrazide 200 ppm (50.0), paclobutrazol 50 ppm (43.2), chlormequat 750 ppm (40.6) and chlormequat 500 ppm (40.5). Sex ratio of male: female flower was lowered down by all the three concentrations of paclobutrazol as well as two concentrations of chlormequat *i.e.* 250 and 500 ppm and maleic hydrazide 200 ppm. Maximum fruit yield (25.9 t/ha) was obtained with the application of paclobutrazol 25 ppm followed by chlormequat 250 ppm (24.6 t/ha) and maleic hydrazide 200 ppm (23.3 t/ha) over control (17.6 t/ha).

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Key words : Bottle gourd, Growth retardants, Sex expression and yield

Bottle gourd/ Lauki/ Ghiya [*Lagenaria siceraria* (Mol.) Standl.] is one of the important and popular vegetable crops of cucurbitaceae family, extensively grown during spring-summer, early autumn and rainy seasons in all parts of the country, particularly in Uttar Pradesh, Punjab, Haryana, Gujarat, West Bengal, Tamil Nadu, Karnataka and Bihar. An average yield of bottle gourd varies according to the systems adopted, season and several other factors. It's tender fruits are widely used as cooked vegetables in a number of ways. It has great export potential to South-East-Asia and Gulf countries.

Besides, high yielding varieties and better management practices, the yield of bottle gourd can still

be increased by adopting improved production technologies like shifting of sex expression towards femaleness. The plants are monoecious in sex form hence, staminate (Male) and pistillate (Female) flowers are borne separately on the same plant and fruit yield depends on the number of pistillate flowers. Several chemicals, called growth regulators like auxins, gibberellins, ethylene and growth retardants have been tried and found useful in this regard in many cucurbitaceous vegetables. The present investigation was, therefore, undertaken to evaluate the potentiality of growth retardants on sex ratio as well as sequence of flowering and yield of bottle gourd cv. 'Pusa Naveen' under south Gujarat conditions.