

Genetic Improvement and Grafting for Green House Vegetable Cultivation

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Abstract—Tomato, cucumber and capsicum have tremendous potential in green house. But for specific growing conditions in green house suitable varieties need to be developed. Tomato Indeterminate, single stemmed plants, Medium sized bright colored fruits, Short internodes More number of fruits per plant, High TSS and acidity, Thermo-insensitivity, Resistance to whitefly and other important diseases and insect-pest. Cucumber, Parthenocarpic slicing cucumber traits, Viny indeterminate thick stemmed plant type, Heavy fruiting habit, Cylindrical dark green fruits, High TSS ,Taste and shelf life, Resistance to diseases, viruses, white fly and other insect-pests. Capsicum Erect growing habit, Few or no lateral. Heavy fruiting, Cylindrical, toothed, bright coloured fruits, Photo and thermo insensitivity, Resistance to diseases, white fly and other insect-pests. Grafting for green house vegetable cultivation. Damage due to continuous cropping system and monoculture from soil borne diseases and nematodes. Grafting of desired scions on to resistant root stocks provides: Disease tolerance, Yield increase, Low temperature tolerance Reduction of fertilizer and agrochemical application. Intergeneric grafting e.g. Cucumber grafted on pumpkin, water melon on bottle gourd and musk melon on ash gourd. Interspecific Grafting: e.g. In Brinjal the commonly used root stocks are Scarlet eggplant (*Solanum integrifolium*) and *Solanum toruum*.

Keywords: Genetic improvement in tomato, cucumber, capsicum, grafting for green house vegetable cultivation.