

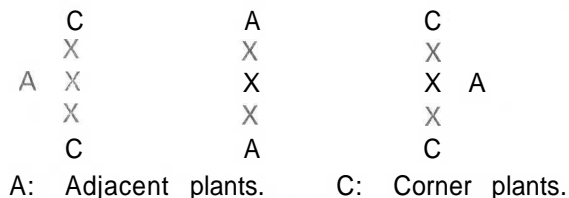
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A NOTE ON INTERPLANT COMPETITION IN FLUE CURED VIRGINIA TOBACCO

Often due to circumstances beyond the control of the experimenter, gaps or plants with relatively poor growth occur in most of the experiments. To draw conclusions from such an experiment, one of the methods employed is to take the per plant yield and analyse the data therefrom. This would be a wrong procedure if such a gap or such a plant with poor growth provides an added advantage to the nearby plants in the plot, by way of absence of competition for resources like soil and light. The present investigation reports the results of a study made to investigate the existence or otherwise of such competition in Flue cured Virginia tobacco.

The data of three uniformity trials laid out at the Central Tobacco Research Institute, Rajahmundry and Tobacco Research Stations at Guntur and Hunsur consisting of 576 plants, in the spacings of 80 cms x 80 cms, 80 cm x 65 cms, 100 cms x 60 cms respectively were used for the purpose. Correlations were worked out between individual plant yield of the corner and adjacent plants and of all the plants surrounding each plant (Fig 1) for green leaf weight per plant in case of Rajahmundry, Hunsur and Guntur and cured leaf, per plant in case of Hunsur and the values are given in Table 1. From the table 1 it can be seen that all correlations except for the one between individual plant yield and total corner plant yield at Guntur are significant but the values are low. Another interesting trend is that while all correlations obtained with data from Guntur and Rajahmundry were negative, those from Hunsur were positive.

Fig. 1: The classification of neighbouring plants.



This trend reveals the existence of some predominant plant competition at Rajahmundry and Guntur (if one plant is high yielding, its neighbours are not) and existence of patch effect at Hunsur (if one plant is high yielding its neighbours also are high yielding). It is necessary to point out that both at Rajahmundry and Guntur the tobacco is grown in black cotton soils without irrigation and at Hunsur it is grown in light soils with irrigation.

Table 1

Correlation between neighbouring plants at different stations

correlation of each plant with	Rajahmundry (Black soil) Green leaf yield/plant	Guntur (Black soil) Green leaf yield/plant	Hunsur (Light soil)	
			Green leaf yield/plant	Cured leaf yield/plant
Corner plants	-0.1360**	-0.0186	0.1786**	-0.2083**
Adjacent plants	-0.1440**	-0.2500**	0.0876**	0.3212**
All surrounding plants	-0.2225**	-0.2691**	0.1769**	0.5729**

* Indicates significance at 5% level. ** Indicates significance at 1% level.

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സംഗ്രഹം

പരീക്ഷണ ഫ്ലോട്ടുകളിൽ നഷ്ടപ്പെടുന്ന ചെടികൾക്കു ചുറ്റുമുള്ള ചെടികൾ പരസ്പരം മത്സരത്തിനു വിധേയമാകുന്നുണ്ടോ ഇല്ലയോ എന്നു അറിയുവാൻ വേണ്ടി ഫ്ലോട്ടുസംസാധിത വിർജീനിയ പുകയിലയിൽ ഒരു പരീക്ഷണം നടത്തുകയുണ്ടായി. മൊത്തം 570 ചെടികൾ ഉൾപ്പെട്ട ഈ പരീക്ഷണം രാജമുദ്രയിലേയും ഗുണ്ടൂരിലേയും ഹുൺസൂരിലേയും പുകയില ഗവേഷണ കേന്ദ്രങ്ങളിൽ ഒരേസമയത്തു നടത്തി. പരീക്ഷണഫ്ലോട്ടിന്റെ മൂലയ്ക്കു നില്ക്കുന്ന വിളവു ചുറ്റുമുള്ള ചെടിയുടെ വിളവുമായും ഓരോ ചെടിയുടേയും വിളവു അവയ്ക്കുചുറ്റും നില്ക്കുന്ന ചെടികളുടെ വിളവുമായും താരതമ്യപ്പെടുത്തിക്കൊണ്ടുള്ള സഹസംബന്ധ പഠനങ്ങളാണ് നടത്തിയതു്. ഒന്നോഴികെയുള്ള എല്ലാസഹസംബന്ധങ്ങളും ഗണനീയമാണെന്നു കണ്ടു. ഗുണ്ടൂരിലേയും രാജമുദ്രയിലേയും ഫലങ്ങൾ വിപരീതാത്മകമായിരുന്നുവെങ്കിൽ ഹുൺസൂരിലെതു ധനാത്മകമായിരുന്നു.

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