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HYBRID VIGOUR IN CASHEW (*Anacardium occidentale*, L)

Hybrid vigour has been reported in many annual and perennial crops and is also commercially exploited in some of them. Naik *et al* (1959) have observed marked reduction in *pre-bearing* age and precocity of bearing in hybrid progenies of mango as compared to the open pollinated seedling progenies. In order to find out whether the same phenomena is exhibited in Cashew, a trial was laid out at the Cashew Research Station, Anakkayam in 1968.

Selfed, crossed and open pollinated seeds were collected from same mother trees and planted in a randomised replicated trial. Growth data, viz, girth of the trunk at a point 15 cm. from the ground, height and mean spread were recorded on 18-7-1972 and the yield data during the years 1971-72 and 1972-73. Mean spread was worked out from the maximum diameter of the conopy in the North-South and East-West directions. The data are presented below.

It may be seen from the above data, that the growth is more in the case of hybrid progenies as compared to the selfed and open pollinated progenies, even though the difference is significant in respect of girth of the trunk only. In yield, however, the hybrid progenies gave significantly higher yields than the selfed and open pollinated progenies. It was also observed that during the bearing season of 1970-71 (third year after planting) ten out of eleven hybrid progenies flowered and set a few fruits, while only one out of ten selfed progenies and three out of eleven open pollinated progenies flowered during that season.

Table 1

Growth and yield data of trees raised from selfed, crossed and open-pollinated seeds in cashew

Treatment No.	Treatment	Growth (Mean/Tree)			Yield (kg) Mean/Tree	
		girth of the trunk (cm)	Height (cm)	Spread (cm)	1971-72	1972-73
1.	Selfed progeny	40.00	395.42	345.08	0.550	0.627
2.	Hybrid progeny	50.83	442.83	412.08	1.263	2.391
3.	Open pollinated progeny	47.75	432.50	382.92	0.500	1.116
	C. D. @ 0.05	8.11	Not significant	Not significant	0.578	1.147

The data presented above and the observations made clearly indicated that the phenomenon of hybrid vigor is exhibited by cashew. If the vegetatively propagated progenies of the F1 hybrids also exhibit heterosis to a marked degree, as reported by Naik *et al* (1959) in the case of mango, it will be possible to exploit this phenomenon commercially in cashew.

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സംഗ്രഹം

കശുമാവിൽ സങ്കരവീര്യം എന്ന പ്രതിഭാസം പ്രകടമാണോ എന്നു നിർണ്ണയിക്കാനായി ഒരു പരീക്ഷണം ആനുകയത്തുള്ള കശുമാവ് ഗവേഷണ കേന്ദ്രത്തിൽ ആരംഭിക്കുകയുണ്ടായി. ഈ പരീക്ഷണത്തിൽ ഒരേ മാതൃവൃക്ഷത്തിൽ നിന്നും ശേഖരിച്ച സ്വയം പരാഗണം മൂലം ലഭിച്ച വിത്തുതൈകളും, സങ്കരവിത്തുതൈകളും പ്രകൃത്യാലുള്ള (open pollinated) വിത്തുതൈകളും തമ്മിലുള്ള ഒരു താരതമ്യപഠനം നടത്തുകയുണ്ടായി. നട്ട തിയ്യതി മുതൽ നാലാം വർഷത്തിൽ വളർച്ച സംബന്ധിച്ച അളവുകൾ പരിശോധിച്ചതിൽ സങ്കരമരങ്ങൾ, മാതൃ രണ്ടുതരം മരങ്ങളേക്കാൾ കൂടുതൽ കരുത്തുള്ളവയാണെന്നു കാണുകയുണ്ടായി. കായ്ച്ചത് തുടങ്ങുന്നതുവരെയുള്ള കാലത്തിന്റെ ദൈർഘ്യത്തിലും സങ്കരമരങ്ങൾ മറ്റുള്ളവയേക്കാൾ ചെറുപ്പെട്ടവയാണെന്നു കാണുകയുണ്ടായി. നാലാമത്തേയും അഞ്ചാമത്തേയും വർഷങ്ങളിൽ ലഭിച്ച വിളവ് സങ്കരമരങ്ങളിൽ മറ്റുള്ളവയേക്കാൾ നിർണ്ണായകമായിത്തന്നെ കൂടുതലാണെന്നും കണ്ടു.

REFERENCES

Naik K. C., Bhujanga Rao, C and Raman, V. S. 1959. Problems in crop improvement in mango-proc. International symposium on the origin, Cytogenetics and breeding of tropical fruits. *I ml. J. Hort.* 159-167.

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