

Role of the Scutellum in the embryonic growth in corn (Maize)

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In a two-week old embryo of corn, the scutellum almost envelopes the axis. Whether this has any special role in the growth of the embryo is the object of this experiment. The two treatments comprising the experiment included:

- 1) The embryo dissected out of the kernel and the scutellum removed under aseptic conditions and kept in Tukey's basic medium to which is added the physiologically active growth-promoting substances (Uttaman, 1949).
- 2) The embryo dissected out of the kernel and kept without removal of the scutellum in Tukey's basic medium plus active growth ingredients indicated in (1).

The embryos in both the treatments germinated the next day of placing in the culture medium and the growth appeared to be more or less the same in both. Each treatment was replicated three times. The results of individual growth measurements (given in millimeters) and the average of the three replications under each treatment for each day are entered in the table below:

Days of measurement	Treatment 1 Replications								Treatment 2 Replications							
	1		2		3		Average		1		2		3		Average	
	S	R	S	R	S	R	S	R	S	R	S	R	S	R	S	R
1st day	3.0	—	2.8	—	3.2	—	3.0	—	2.5	—	2.0	—	1.5	—	3.0	—
2nd "	7.0	0.5	6.0	0.5	8.0	0.5	7.0	0.5	7.5	9.5	7.0	8.5	6.5	9.0	7.0	9.0
3rd "	8.0	1.0	7.0	0.8	9.0	0.9	8.0	0.9	20.2	12.8	20.0	11.4	19.8	11.8	20.0	12.0
4th "	8.0	1.0	7.0	1.0	9.0	1.0	8.0	1.0	30.5	13.2	30.0	12.8	29.5	13.0	30.0	13.0
5th "	10.0	1.0	9.5	1.0	10.2	1.0	9.9	1.0	30.8	23.6	30.7	23.2	30.6	23.4	30.7	23.4
6th "	10.0	1.0	9.5	1.0	10.2	1.0	9.9	1.0	37.0	23.6	36.5	23.2	36.0	23.4	36.5	23.4

It will be seen that the embryo in which the scutellum was not removed (Treatment 2) has the largest growth for both shoot and root. The growth is very tardy and poor in the one in which the scutellum is removed (Treatment 1).

Discussion: Whether the scutellum in the young embryo exercises any special physiological function for the promotion of growth in the young embryo or merely plays a physical role in providing the absorption surface necessary for the supply of nutritive elements to the embryo is a matter for more critical investigation. The large growth for the embryo whose scutellum is not removed, in this experiment, may be attributed either to the one or the other of the two possible functions of the scutellum stated above, or to both. The poor growth of the embryo in which the scutellum was removed may be partly due to the shock sustained by the embryo in the process of the removal of the scutellum. But this should not last long and the young growing embryo should be able to get over this shock and continue growth if the scutellum had no vital connection whatsoever with the growth promotion in the young embryo. Hence it seems that the scutellum does play a definite role in the promotion of embryonic growth.

REFERENCE

1. Uttaman, P. Culturing of pro-embryos of normal diploid corn aged 3-7 days. *Current Science*, 1949, Vol. 18, 445.

Some Experiences with BHC (Gammexane) and DDT.

V. The Cotton and Bhindi Jassid, (*Empoasca devastans*, D)

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Jassids, popularly known as leaf-hoppers, belong to the category of bugs. These are tiny, active wedge-shaped creatures, infesting a variety of cultivated crops. The adults and nymphs are provided with a set of piercing and sucking mouth-parts with which they are able to puncture the tender portions of the plants and suck up the nutrition. The bugs usually occur by millions on their respective hosts and despite their minute size, they are capable of causing an enormous drain of the cell-sap. Over eight species of these jassids have been recorded as crop pests in South India, the more serious forms of which are (1) The paddy jassid (*Nephotettix bipunctatus*, F.), (2) the mango hoppers (*Idiocerus Atkinsoni*, L.) and (3) the cotton jassid (*Empoasca devastans*, D.). The present article is about the last mentioned species.