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\* This plant has been referred to in literature as *Utricularia exoleta* R.Br. but has been changed to *U. gibba* Linn, sub sp. *exoleta* (R.Br.) Taylor (Taylor, 1963).

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### THE RICE COLEOPTILE STRAIGHT GROWTH TEST FOR AUXIN BIOASSAY

BIOASSAY of auxin using oat coleoptile straight growth test introduced by Bonner<sup>1</sup> has since been worked out by several authors<sup>2,3,4</sup> under different conditions and using different oat varieties. A few investigations<sup>3,5</sup> have also shown that wheat coleoptile could successfully be employed for the biological assay of auxin. However, it is desirable to investigate the suitability of other plants for auxin bioassay not only from the standpoint of finding more sensitive material but also in view of their ready availability. The present work therefore, attempts to find out whether the locally readily accessible rice plant could be adopted for the coleoptile straight growth assay of auxin.

A cultivated variety of rice (*Oryza sativa*, L. var. MTU-20) was selected for the investigation. The seeds were washed under the tap followed by distilled water and were surface sterilized by a rapid rinsing in rectified spirit. They were then washed with glass distilled water and soaked in the same overnight in darkness. The soaked seeds were sown on wet filter paper in 6" petri dishes in a dark room maintained at 24° to 26° C. and growth was allowed for 60 hours. The average length of the coleoptiles by then was about 1.5 to 2.0 cm.

After 60 hours germination the coleoptiles were decapitated in diffuse light by discarding the 3.0 mm. portions from the tops. The next 4.0 mm. sections were used for the bioassay. The range of concentration of Indole-3-acetic acid (IAA) tried was from  $10^{-9}$  M to  $10^{-3}$  M made up in 2.0% unbuffered sucrose. Ten coleoptile segments each were floated on 2.0 ml solution of 2.0% unbuffered sucrose for control and 2.0 ml of IAA solutions in watchglasses

and were incubated in darkness at 24°–26° C. After 18 hours incubation the length attained by the coleoptile segments was measured under a binocular microscope using mm. graph paper. The experiment was repeated 4 times. The result is shown in Fig. 1.

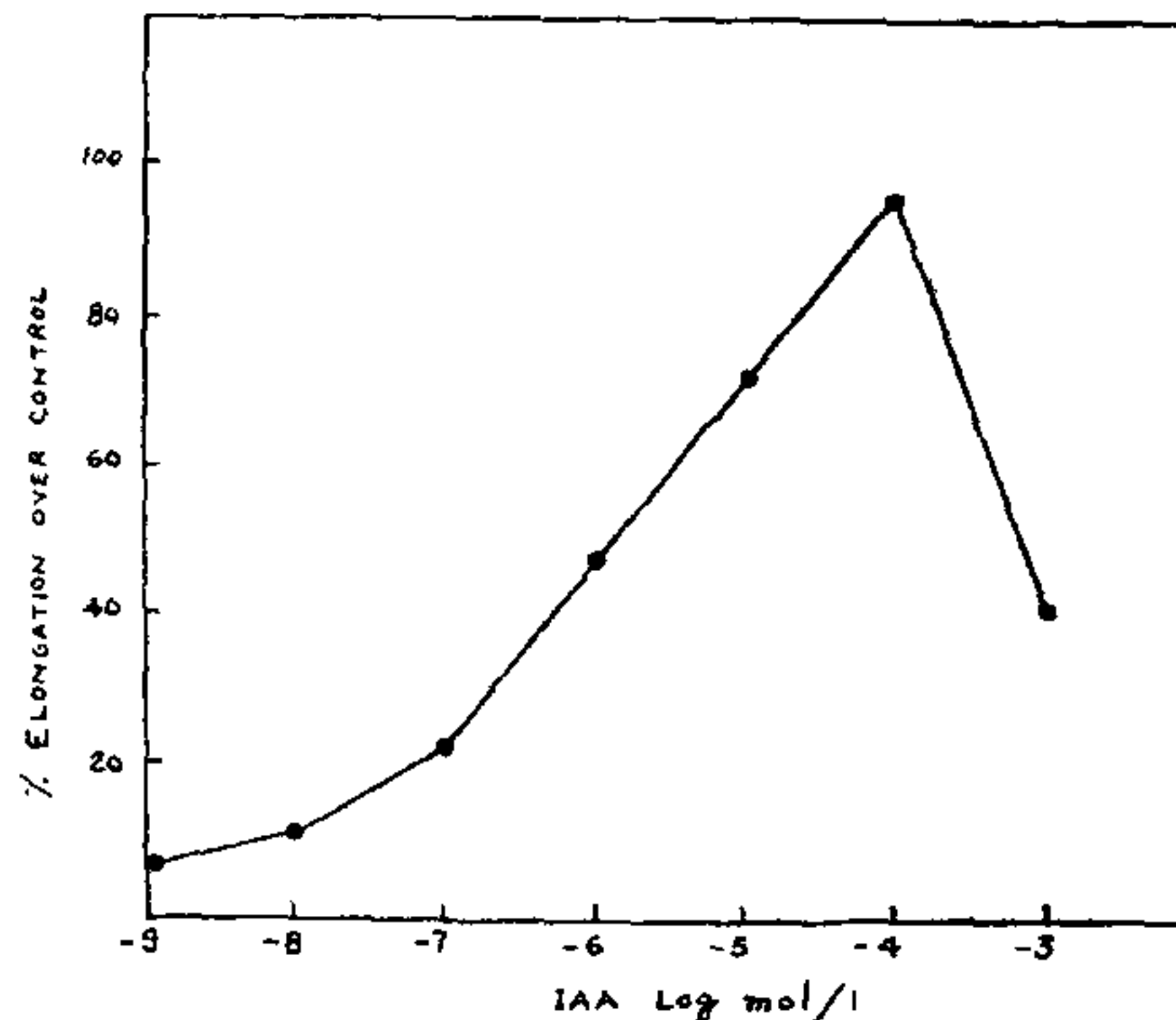


FIG. 1. Straight growth response of rice coleoptile segments to IAA. Each point represents an average length of 40 segments (4 experiments).

A linear response of rice coleoptile segments to IAA between  $10^{-7}$  M and  $10^{-4}$  M was observed. The total growth increment at  $10^{-4}$  M was about 135% over original length of segments at the beginning of incubation. The control segments in sucrose solution showed only about 35% extension over their original length. Thus a net increment in growth of about 100% over control was observed at maximum.

The present results show that under the conditions tried, rice coleoptile response could well compare with that of oat coleoptile under optional conditions as reported by several workers.<sup>2,3,4</sup> Hence it is believed that rice plant could be a useful addition to the plants already in use for the coleoptile straight growth test for auxin.

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