THE USE OF ION-EXCHANGE RESINS IN THE ISOLATION OF THE FLAVONOID COMPOUNDS FROM OKRA

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In the course of an investigation for new sources of flavonoid compounds, the fresh pods of the okra plant *(Hibiscus esculentus)* have been tested. Seshadri and Viswanadham (1) have previously reported the presence of the flavonol glycoside, gossypin (3,5,7,8,3', 4'-hexahydroxy flavone-8-glucoside), in the blooms of the okra plant.

Experimental

Two kilograms of freshly picked okra pods were boiled for two hours with 5 gallons of water. The filtered extract was then passed through a 2 inch by 48 inch ion-exchange column of Amberlite IRC-50(H). The column was washed with distilled water to remove the last of the extract. When the water washings had cleared, the flavonoid material was eluted by passing 1300 ml. of 95% ethyl alcohol through the column. The alcohol was collected separately as it filtered through the resin bed and was then concentrated to 200 ml. The concentration procedure removed most of the alcohol and left a water solution of the flavonoid material. The concentrate was then extracted with two 50 ml. portions of ethyl ether. A third ether extraction failed to remove any additional flavonoid material, although the water layer still exhibited strongly positive flavonoid tests.

The ether solution was concentrated to approximately 5 ml. The residual solution consisted principally of alcohol and water. Addition of an equal volume of water to this residual solution produced a light yellow solid. Qualitative tests performed on this solid confirmed the presence of a flavonoid compound. Paper partition chromatography of a small amount of the material indicated only one flavonoid compound was present. Only one fluorescent pigment zone was observed when the sample was chromatographed in chloroform-isopropyl alcohol-water (20-40-40 volume %) and in butanol-acetic acid-water (40-10-50 volume %). The R_f values in these two systems were: .84 and .75, respectively.

Further characterization work is planned when the 1951 crop of okra becomes available.

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LITERATURE CITED

1. Seshadri, T. R. and Viswanadham, N. 1947. The coloring matter of the flowers of *Hibiscus esculentus*. Current Sci. (India) *16*: 343.