
THE ISOLATION OF FLAVONOID GLYCOSIDE FROM GLEDITSIA TRIACANTHOS

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The honey locust tree (*Gleditsia triacanthos*, L.) is native to the United States. Gakhokidze (1) reported the isolation of 1-epicatechol-3-D-glucoside (3,5,7,3′, 4′-pentahydroxy flavane-3-D-glucoside) from the pulverized seeds of the honey locust pods by means of a boiling alcohol extraction procedure. Gakhokidze and Kutidze (2) later reported the presence of the flavone aglycone acrammerin (3′, 4′, 5, 5′, 7-pentahydroxy-8-methoxy flavone) in the seed pods of this tree. They isolated this flavone by means of a boiling alcoholic sodium hydroxide extraction procedure. Their method possibly precluded the iso-

lation of a glycoside of acrammerin due to alkaline hydrolysis. The present paper describes the results of tests made on the fruit obtained locally, as a possible source of flavonoid pigments. The material isolated in this laboratory does not correspond with either of the pigments cited above.

EXPERIMENTAL

Two kilograms of the green pods (65% moisture) of several honey locust trees located on the campus of the University of Oklahoma were collected on September 1, 1950. The pods were broken into small segments and the entire material extracted with boiling water (15 gallons of water per kilogram of beans). The filtered aqueous extracts were concentrated in a flash evaporator at 100 mm. pressure to a final combined volume of 1.6 liters. The concentrate was then extracted with an equal volume of butanol. On concentration of the butanol extract, at reduced pressure, a pinkish-brown solid separated and was recovered by filtration. The yield was 5.3 gm. This material gave a strong red color on reduction with magnesium and hydrochloric acid in alcohol solution (cyanidin test). It was very soluble in ethyl alcohol, dilute acids and dilute bases. The melting point was 230°C, uncorrected. This flavonoid pigment was definitely a glycoside.

Paper chromatography of this flavonoid glycoside in 60% acetic acid-40% water produced only one pigment zone which fluoresced light-blue under ultraviolet light (R_f = .61). The ultraviolet absorption spectrum of the material in 95% ethyl alcohol showed absorption maxima at 285 $m\mu$ and 320 $m\mu$.

A portion of the glycoside was hydrolyzed by boiling with 1% sulfuric acid. A water insoluble solid precipitated and was recovered by filtration. The R_f value of the aglycone was .21 in 60% acetic acid. The ultraviolet absorption spectrum showed absorption maxima at 285 $m\mu$ and 370 $m\mu$. The melting point of the hydrolyzed pigment was 250° C, uncorrected.

Honey locust pods which were gathered on September 26, 1950, showed a very low flavone content when treated in the manner described above. The pods had begun to blacken at this time. Work will be continued on this material when the 1951 crop of seed pods becomes available.

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LITERATURE CITED

1. GAKHOKIDZE, A. M. 1946. A glucoside from *Gleditsia triacanthos*. J. Applied Chem. (U.S.S.R.) *19*: 1197-1200.
2. GAKHOKIDZE, A. M. and KUTIDZE, N. D. 1947. Pigments of *Gleditsia triacanthos*. J. Applied Chem. (U.S.S.R.) *20*: 899-903; Chem. Abs. *42* 4173 (1948).