
A STUDY OF A POSSIBLE ORAL HYPOGLYCEMIC FACTOR IN *ALBAHACA MORADA* (*OCIMUM SANCTUM* L.). In Cuba as in the rest of the Carribean area, the people practice a "folk medicine" as part of their routine living. Usually, the herbs are prepared as in brewing tea (infusion) or the plant material is treated with boiling water, extracted for a short time, and the filtered or decanted aqueous extract (decoction) taken liberally. Of special interest to us were those plants having a reputation for being helpful in diabetes (Asprey and Thornton, 1953).

We have for some time been trying to verify reports of plants with oral hypoglycemic action. The following plants have been used for control of blood sugar levels: *Brasilete*, *Jambolin*, *Mastuerzo*, *Yerba hedionda*, *Yerba de la Niña*, *Yerba de San Martin*, *Sauco amarillo* (equivalent to the Mexican "Tronadora"), all popular Latin American names (Roig, 1945).

In recent years, there have been increasing reports for the successful use of the plant *Albahaca morada* in self-treatment of diabetes. The entire plant, flowers, branches, leaves, seeds, was used in making a decoction which was taken as a beverage two or three times daily. We chose this plant for our initial study.

The *Albahaca morada* is a perennial bush, and when flowering the whole presents a purple color. The essential oils of the *Albahacas* (several varieties are important in the food and perfume industries) may contain: methyl chavicol, linalool, ocimene, thymol, terpinenes, d-camphor, alocinamate, eucalyptol, pinenes, and other medicinal factors (Winton and Winton, 1939). For our investigation, the authentically-identified plant was grown by the *Estacion Agronomica* (Agricultural Experimental Station).

The purpose of the preliminary clinical trails was to simulate as far as possible, the actual manner in which the plant *Albahaca morada* was used and to observe its effect. In a typical preparation, the whole dried plant was cut into small pieces and tossed into boiling water (20 g/liter). After stirring and boiling for three min, the mixture stood five min. The supernatant layer was decanted from the solids and filtered while still hot through cotton cloth. The pungent, cloudy-green extract was bottled immediately and refrigerated.

We worked with a group of diabetics in the Out-Patient Department of a large "people's hospital" in Havana. Some of the patients had case histories dating back more than ten years. All of them agreed to cooperate with their doctor in drinking the herb decoction for at least 15 days, but many continued for more than two months. In addition, a group of *non-diabetic* people volunteered to cooperate in observing the action of the plant on their normal blood sugar levels.

The patients drank approximately 24 ounces daily of the freshly prepared *Albahaca morada*. They made their own conventional glucosuria tests two or three times daily, but their blood sugar levels were recorded weekly at the hospital.

All these diabetics were difficult cases, whose blood sugar levels had been persistently rising in spite of increasing drug dosage. Therefore, in this preliminary investigation their regular regimen of insulin or tolbutamides was maintained. The only new factor was the introduction of the herb into their diet.

Urine and blood sugar data were compared with the patients' past record of glycemia and glucosuria. It appeared that most of the diabetics were now better stabilized in their daily sugar levels and many maintained negative glucosuria levels for longer periods of time as compared to their previous records. This was irrespective of the regimen of medication they were obliged to follow. Where there was improvement, the effect continued for varying amounts of time (30 to 60 days) after treatment was discontinued.

Of the eleven diabetics who participated, seven responded favorably including two childhood cases. Two showed no change in their condition, and only one was negative (one dropped out). No side effects were noted and there were no objections to taste, odor, or palatability.

Because of the long duration of the experiment (about three months) it was believed that the subjective factor had been minimized.

The *normal, non-diabetic group* (technicians in the Department of Hygiene and myself) also drank the same amount of the herb decoction and made no other change in their daily living habits. In this group, the blood sugar levels were followed, and all these showed a gradual but consistent lowering from their individual norms.

Chemical testing of the dried plant gave a negative test for alkaloids, and galegine-type compounds (Reutter, 1923; The Assoc. of Official Agri. Chemists, 1960). Galega Officinales, has the formula $(\text{NH}_2)_2\text{-C}=\text{N-CH}_2\text{-CH}=\text{C}-(\text{CH}_3)_2$. Compounds of this type have an oral hypoglycemic action and were the models for several of the earlier synthetic hypoglycemic compounds (Reutter, 1923; Wilson and Gisvold, 1954). However, their use has been discontinued because the compounds produced undesirable side effects.

Chemical isolation of the active principle in *Albahaca morada* is now indicated as well as comprehensive long range studies.—NYDIA LUTHY, Ph.D., 3328 Euclid Avenue, Cleveland 15, Ohio, AND ORTELIO MARTINEZ-FORTUN, M.D., Havana, Cuba.

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