

Chia Research

MEDICAL ASPECTS

Salvia hispanica L has been investigated at the Risk Factor Modification Center, St. Michael's Hospital, University of Toronto, Toronto, Canada, by * Dr. Vladimir Vuksan, Associate Professor of Endocrinology and Nutritional Sciences, Faculty of Medicine in randomized, acute and long-term studies. In the acute study, Salvia hispanica L reduced after-meal blood glucose and plasma insulin levels, compared to control. In a long term trial (12 weeks), Salvia hispanica L reduced blood pressure, the major cardiovascular risk factor in individuals with Type 2 blood sugar instability. In the same study, Salvia hispanica L proved to be effective with respect to reduction in inflammation and coagulation factors. These unexpected clinical results indicate the great health potential of Salvia hispanica L as a functional food, to be used as a novel agent in the prevention and treatment of cardiovascular disease.

As Chief Investigator of clinical studies on Salvia hispanica L, Dr. Vuksan stated: "Due to its extremely high content of Omega-3 fatty acids, a nutrient rich composition and results of preliminary clinical trials, Salvia hispanica L creates exceptional possibilities for the improvement of human health and nutrition. Salvia hispanica L can be considered the perfect functional food".

ACUTE FEEDING STUDY

In this first acute clinical study, 6 healthy males were given 30% Salvia hispanica L enriched white bread and standard white bread as a control food.

Following consumption of the experimental bread with Salvia hispanica L, venous blood samples were tested on the participants over a 2-hour period of time for blood glucose and insulin concentrations. The results were as follows:

White bread enriched with 30% Salvia hispanica L lowers after-meal plasma glucose at 90 and 120 minutes after ingestion of the experimental bread with Salvia hispanica L compared with white bread control.

- White bread enriched with 30% Salvia hispanica L lowers after-meal plasma insulin at 30 and 45 minutes after ingestion of experimental bread compared with white bread control.

- It has been concluded that in comparison with standard white bread, Salvia hispanica L enriched bread improves overall after-meal insulin sensitivity (lower glucose with less insulin required) indicating its possible use in individuals with metabolic syndrome, otherwise healthy obese patients, as well as individuals already suffering from Type 2 Blood Sugar instability.

LONG TERM STUDY

This randomized clinical trial examined whether the addition of Salvia hispanica L to the conventional medical treatment for Blood Sugar instability is associated with long term improvement in traditional risk factors and non-traditional risk factors for cardiovascular disease in people with Type 2 Blood Sugar instability.

Based on results of a 3 month, cross over, randomized clinical trial in well-controlled Type 2 Blood Sugar Instability, the following conclusions were determined:

- There were no adverse reactions or side effects in relation to consuming over 50 grams of *Salvia hispanica* L daily.
- *Salvia hispanica* L added to conventional medical treatment and a healthy diet affects Blood Sugar instability control by lowering hemoglobin A1C (long-term diabetes control indicator).
- *Salvia hispanica* L diet significantly lowered systolic blood pressure (>9 mm HG)
- Some of the traditional risk factors such as fasting blood glucose and blood lipids were not negatively affected as previously seen in other studies using Omega-3 as a treatment modality.
- *Salvia hispanica* L diet reduces body low-grade chronic inflammation (almost 40% reduction in CRP).
- A significant decrease (over 30%) on coagulation (blood thinning effect) was obtained.
- *Salvia hispanica* L could be considered a novel therapy in Type 2 Blood Sugar instability and cardiovascular disease (CVD) risk reduction.