

PROJECT REPORT ON

“EFFECT OF *ACORUS CALAMUS* ON LEARNING AND MEMORY IN STRESSED RATS”

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SYNOPSIS

Acorus calamus (Araceae), also known as Calamus or Sweet Flag is a commonly used herbal medicine in Ayurvedic system. It is a semi aquatic herb growing in shallow water or in a very moist loamy soil. Roots and rhizomes of *Acorus calamus* have been used as a single drug or as a component of certain compound drug preparations in the Indian Ayurvedic system of medicine for psychoneurosis, insomnia, hysteria, epilepsy and loss of memory. It is also used in the treatment of cough, fever, bronchitis, inflammation, depression and other mental disorder. Various studies indicated that *A. calamus* possesses anticonvulsant, antioxidant, neuroprotective and immunomodulatory properties. Therefore this plant was selected for the study of its effect on learning and memory abilities in stressed rats.

Animals were divided into 3 groups namely normal, stressed, stressed and drugged respectively, having six animals each. Plant rhizome was dried, powdered and the extract was prepared using 50% ethyl alcohol in the soxhlet extractor. Phytochemical analysis was carried out for the presence and estimation of carbohydrates, proteins, starch, tannins, phytosterols, saponins, resins etc. Group 2 and group 3 animals were confined to a restrainer daily for 21 days for 6 hours a day each to induce chronic stress. Simultaneously group 3 animals were fed with 1.5 ml/day drug dose of the plant extract. Corticosterone levels in the plasma of the stressed rats were analyzed using EIA Kit on the zeroth, 3rd, 10th and 21st day of stress. The learning and memory abilities of all the groups of rats were analyzed using Hebb-Williams maze after 21 days.

The drug treated rats (group 3) showed better memory retention in the Hebb-Williams maze. Their learning and memory ability was much better when compared to the other groups of rats. The effect of stress is overcome by the drug and the drug is said to enhance the memory.