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Neuroprotective effects of *Nigella sativa* extracts during germination on central nervous system

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Nigella sativa Linn. have many acclaimed medicinal properties, is an indigenous herbaceous plant belonging to the Ranunculaceae family. This study was designed to investigate the effects of *N. sativa* extract from ungerminative seed and from different germination phases of seed on the CNS responses in experimental animals. Anxiolytic, locomotor activity of extracts (1 g/kg) was evaluated in both stressed and unstressed animal model and antiepileptic effect was evaluated by maximal electroshock seizure model keeping diazepam (20 mg/kg) as a positive control. Antidepressant effect was evaluated by forced swim test and tail suspension test keeping imipramine (15 mg/kg) as a positive control.

All tested extracts of *N. sativa* during different phases of germination showed significant anxiolytic effect in comparison to control ($P<0.001$). Diazepam reduced locomotor activity in unstressed rats did not affect in stressed rats while *N. sativa* extracts from germination phases significantly ($P<0.001$) reduced locomotor activity in unstressed as well as stressed animals. All the extracts of *N. sativa* from different germination phases exhibited significant ($P<0.001$) reduction in various phases of epileptic seizure on comparison with the reference standard diazepam.

A significant reduction in the time required for the recovery during epilepsy was observed in 5th day germination extract treated groups. During antidepressant test *N. sativa* extracts did not exhibited significant reduction in immobility of rats. On the basis of all these results it was concluded that during germination especially in 5th day germination *N. sativa* have significant CNS depressant activity as compared to whole seed in may be due higher content of secondary metabolites during germination.

Biography

Mohammad Hayatul Islam is pursuing Ph.D. from Integral University, Lucknow, India. He has published a book and many research papers in reputed international journals. He has been awarded with national level fellowship during Ph.D. His expertise is in areas related to animal tissue culture and pharmacology.

Preparation of cookies with high nutritional value, protein content and health benefits

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In this health conscious world, cookies being a part of everybody's diet could be a great way to add nutrition in a tastier way, hence our project attempted on baking multi nutritious cookies (with various flavours) by substituting a higher percentage of conventional ingredients - refined flour, sugar and oils/ butter/ egg yolks/ vegetable oil by mixed cereal, flax seed powder, coconut oil, gingili oil, palm sugar. Spirulina and soya bean were also added to enhance the protein content of the cookies. After the cookies were prepared sensory analysis was done and the data obtained was interpreted using SPSS software (version- 11.5 for windows). Statistical analysis suggested that cookie C (ingredients - maida, mixed cereal powder, flax seed powder, dalda, coconut oil, gingili oil, palm sugar, powdered sugar, spirulina, vanilla essence) was liked by most of the people. Eventually cookie C was optimised for different flavours (vanilla, chocolate, orange, pineapple) by doing sensory analysis and the data interpretation resulted in vanilla flavour as the best. Followed by all this nutritional analysis of cookie C (vanilla flavour) was done.

Keywords: Sensory analysis, SPSS software, Nutritional analysis, Spirullina, Soya bean