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BOOK OF ABSTRACTS

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***Nepetamenthoides* reverses scopolamine-induced amnesia**

Kiyani N¹, Kiyani A¹, Khademizadeh M¹, Ranjbarpazuki M¹, Aliaslmamghani F¹, Mozaffaridehshiri A²
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According to Iranian traditional medicine, *Nepetamenthoides* can be used as cerebral purgative and memory enhancer. In this study, effects of *Nepeta* on spatial recognition memory has been investigated in a two-trial recognition Y-maze test. *Nepeta* water soluble and/or hydro-alcoholic extract (50,100, 150 mg/kg, i.p.) was administered immediately after training session in the presence and absence of scopolamine. For investigation of L-NAME interaction with the effect of *Nepeta* on memory consolidation, L-NAME (10 mg/kg,i.p.) was administered immediately after training session; *Nepeta* extract (100, 150 mg/kg, i.p.) and scopolamine (1 mg/kg) were administered as described above. In another set of experiments, effects of NO precursor, L-arginine, was investigated on effect of *Nepeta* on memory consolidation, L-arginine (150 mg/kg, i.p.) was administered immediately after training session; *Nepeta* sub-effective dose (50 mg/kg) which was determined based on a pilot study for the minimum effective dose of scopolamine (1 mg/kg), were administered as described in the following schema:

Training trial $\xrightarrow{\text{immediately}}$ *Nepeta* extract + scopolamine (or saline) + L-NAME $\xrightarrow{30\text{min}}$ Retention Or L-arginine

Nepeta (100,150 mg/kg) reversed scopolamine-induced amnesia. While the beneficial effects of *Nepeta* on memory consolidation was significantly reversed by L-NAME (10 mg/kg), L-arginine (150mg/kg) potentiate the effects of sub-effective dose of *Nepeta* (50 mg/kg) on memory consolidation. The present study demonstrates that *Nepetamenthoides* reversed scopolamine-induced amnesia via possible involvement of NO pathway.

References 1-Amin Gh,2008,Popular medicinal plants of Iran,Tehran University 2-Aghili khorasani,Makhzan-al-advieh

The effect of biofertilizers and winter cover crops on essential oil production and some agroecological characteristics of basil (*Ocimum basilicum* L.) in an organic cropping system

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In searching for new strategies of medicinal plant production with high yield but without undesirable compounds or effects, it is important to investigate unconventional alternatives such as application of Plant Growth Promoting Rhizobacteria (PGPRs) and cover crops cultivation. This experiment was conducted in a split plots arrangement with two factors based on a Randomized Complete Block Design (RCBD) with three replications during years 2009-10, at Research Farm of Ferdowsi University of Mashhad. Cultivation and no cultivation of cover crops in autumn considered to the main plots. The sub plot factor was biofertilizer application with four levels, included 1-Nitroxin (containing *Azotobacter* spp. and *Azospirillum* spp.), 2-Biophosphorous (containing *Bacillus* sp. and *Pseudomonas* sp.), 3-Nitroxin + Biophosphorous and 4-Control. The results showed that the highest and the lowest of Leaf Area Index (LAI) and Green Area Index (GAI) were obtained in plants treated by Nitroxin without cover crop and biophosphorous with cover crop, respectively. Plants harvested in 3 times during the growing season and the third harvest had the lowest LAI and other two harvests had no significant difference concerning this trait. The highest and the lowest fresh and dry shoot yield were obtained in the second and the first harvest, respectively. The most essential oil yield obtained from the second and the third harvest (without significant difference) and the first harvest was the lowest. The results showed that the interaction between biofertilizers and no cover crop cultivation was significant, as use of the biofertilizers especially Nitroxin and biophosphorous in no cover crop condition enhanced the most characteristics of basil in an ecological production system framework.