Abstract
Herbs and spices are being used since ancient times as flavoring agent, or for their nutritional and medicinal properties. Present day consumers are more interested in using natural products in their daily life than synthetic substances. Five commonly used herbs and spices of Iran or India namely Borage (Echium amoenum), Valerian (Valerian officinalis), Ginger (Zingiber officinale), Lime (Citrus aurantifolia) and Shallot (Allium ascalonicum) were selected and used for the study in dry form. The study was divided in two phases. In phase I, chemical constituent (proximate composition, vitamin and mineral content), antibacterial activity of samples in two extracting media against seven pathogenic bacteria and antioxidant potential of samples (antioxidant component and antioxidant activity) were analyzed. In phase 2, antioxidant potential of borage and shallot was evaluated in diabetic patients and cigarette smokers respectively. Borage also was studied for its effect on different mood states. An animal study was carried out to elucidate the effect of valerian and ginger on weight gain and food intake and possible effect on selected blood parameters of rats.

Among samples valerian had highest mineral content, borage was higher in protein, ginger in fat, lime in vitamin C and shallot in carbohydrates. It was observed that, all samples showed antioxidant activity at different levels. Among samples, borage showed the highest antioxidant activity as well as components. Antibacterial potential was observed only in shallot and lime. Aqueous extracts of samples demonstrated more activity than methanolic extract. In-vivo study showed high antioxidant potential of borage in non insulin dependent type 2 diabetes mellitus. It was also observed that borage supplementation reduced blood cholesterol, triglyceride, LDL and VLDL in diabetic subjects. Shallot supplementation significantly reduced lipid peroxidation and increased total thiol and total antioxidant activity in cigarette smokers. Borage significantly improved mood states in subjects with higher score. Valerian supplementation significantly increased weight gain of wistar rat and slightly increased food intake of animals, whereas ginger supplementation showed significant weight reduction without significant changes in food intake. Liver function test, lipid profile and CBC remained normal in both experimental groups. It can be concluded that all samples showed nutritional and antioxidant potential and demonstrated nutraceuticals properties.