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Reversed-phase liquid chromatographic quantification of pyrethrin in the essential oil of wild *Tanacetum parthenium* (Feverfew) from Northern Khorasan province, Iran

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Chemical insecticides applications for pest control possess serious impacts on human health and environment. Nowadays, intensified efforts to find safer and environmental friendly alternatives have resulted in identification and production of some plant-derived natural ingredients that can be used against insect pests. Amongst these plants, feverfew, *Tanacetum parthenium* from Asteraceae family is reputed to have insecticidal properties in addition to its excellent medicinal values. In this study, we quantitative and evaluated the essential oil of *T. parthenium* collected from Northern Khorasan province (Northeast of Iran) for its pyrethrin content using RP-HPLC chromatography. Flowers and leaves of *T. parthenium* harvested at flowering stage were dried at cool and dark place and subjected to 3 steps maceration with 30 ml chloroform and shaking for 1 hour, followed by filtration. Pyrethrin contents were then read by chromatographic method at 230 nm wavelength against the background of calibration regression equations. Our results indicated that dry flowers contain 0.46% total pyrethrin [I+ II], whereas leaves and stems include 0.06% pyrethrum. Pyrethrin was more concentrated in flower than stem. The wild population of *Tanacetum parthenium* of Northern Khorasan province demonstrates high potentiality to be commercially cultivated if it undergoes a plant-breeding program to manipulate phenotypic variation in the concentration of bioactive compounds present at harvest.

Biography

Mohammad Saaid Dayer has completed his PhD from University of Newcastle in UK and is presently working as a Lecturer in the Department of Parasitology and Medical Entomology of Tarbiat Modares University in Tehran, Iran. He has his research interest in biological control of medically important arthropods using natural products including medicinal plants. He has published more than 25 papers in reputed journals and presented papers in many international scientific events.

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