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Evaluation of water spray application for organic control of date palm spider mite *Oligonychus afrasiaticus* (McGregor) (Acari: Tetranychidae) of date palm orchards in southern parts of Iran

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Abstract

Oligonychus afrasiaticus (McGregor) is an important date palm pest orchard in Iran and other date growing in the world. Direct mite incidence along feeding on date fruit caused 100% losses on commercial date varieties. Chemical date palm spider mite (DPSM) control initiated in 1960 in southwestern part of Iran through Tetradifen application and today extended in large date orchards in the country. Water spray application on DPSM under taken through block randomized designed with four replications during period of 2000-2001 on date varieties i.e. Mordarsangh, Kabkab, Berhi, Mazafati, Halileh in Hormozghan, Bushehr, Khuzestan, Kerman and Sistan and Baluchestan provinces of Iran respectively. Amount of 8 to 10 little water spray with help of concern instrument during late morning hours. The mobile mite mortality% was evaluated through Henderson–Tilton method by collecting 20 date fruits which two date clusters selected randomly from each replication and counted with help of stereo-microscope. Mite sampling followed at interval of one day before, 3, 7, 14 and 25 days after treatments. Light copious webbing around date clusters observed in late April in Kuzestan province and this type of injuries recorded after three months interval (July) on date palm's of Sistan and Baluchestan provinces in south eastern part of country. Mean date palm infested by DPSM was found higher in year of 2001 in comparison of the first year study. Max & min mean of mites' densities on a date fruit recorded 14.9 and 2.08 mites on Kabkab and Berhi var. in Bushehr and Kuzestan respectively while Halileh var. in Sistan and Baluchestan province possess higher number of mite during two years of investigation. Mean of mite mortality% statistically observed significant at level of 5% during sampling period with maximum control of mite at seven days interval whereas longer effects of water spray recorded up to 25 days in Kerman province. Two years mite mortalities% analysis result over 90% mite control in date orchards of Khuzestan, Hormozgan and Kerman provinces during first and second year respectively. Max water spray effect can expected when mean of mite on a date fruit was recorded below three mites with three consequent spray at 7 to 10 days interval which make possible organic date production in Iran with regard further mite resistance and hazardous of pesticides to the environment.

Key words: *Oligonychus afrasiaticus,* Date palm, Varieties, Water spray. Control, Southern parts, Iran

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