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Population fluctuations of Alate aphids in potato fields of Hamedan province

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ABSTRACT

Using water yellow traps, population fluctuation of winged aphids, vector of potatoes viral diseases, has studied in four districts of Hamedan province including Hamedan, Kaboodar ahang, Ghahavand and Assadabad during 1998-2000 period. In this connection, four species belonging to family Aphididae and one species of family Drepanosiphidae were collected. Among vector species *Therioaphis trifolii* forma *maculata* (Buckton) with 65-91% of total collected population tored other species in all above mentioned district. The other important species, collected in lower number, were *Acyrthosiphon pisum* (Harris), *Myzus persicae* (Sulzer), *Macrosiphom euphorbiae* (Thomas) and *Aphis frangullae gossypii* (Glover). Kaboodarahang with lowest population of aphid vectors and shortest period of aphid presence in potato fields considered as the most suitable region and Hamedan district owing to high vector population and longest presence of aphids in fields showed to be the most unsuitable site for basic seed potato production the other two districts are evaluated as intermediary to two above-mentioned regions.

Key words: potato aphids, population density, hamedan

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References

BLACKMAN, R. L. and V. F. EASTOP, 2000. Aphids on the world's crops. An Identification and Information Guide, Department of Entomology, The Natural History Museum, second edition. John Wiley & sons. 46pp.

BEUKEMA, H. P. and D. E. VANDERZAG, 1990. Introduction of potato production. International Agricultural Center (IAC) wageningen. 179pp.

BLACK, L. M. and W. C. PRICE, 1940. The Relationship between viruses of potato calico and alfalfa mosaic. Phythopatology 30, 444-447.

CALDIZET, DO., OH. CASO, LV. FERNARDZ and G. VATER, 1999. The potential for production of high quality seed potato in Argentina. Potato Research, 1999. 42: 1, 9, 23.P.

DE BOKX, J. A. and H. HUTTINGA, 1987. Potato viruses and seed potato production. International Agricultural Center (IAC) wageningen 259 pp.

FOLSOM, D., G. W. SIMPSON and R. BONDE, 1955. Maine potato diseases, insects, and injuries. Maine Agricultur. Exp. Bull. 469.

FUENTES, S., M. A. MAYO, C. A. JOLIIY, M. NACANO and L. F. SALASAR, 1996. A novel luteovirus from sweet potato leaf speckling virus. Ann. Appl. Biol. 128: 491–504.

KENNEDY, J. S., M. F. DAY and V. F. EASTOP, 1962. A conspectus of aphids as vectors of plant viruses. Commonwealth Institute of Entomology, London. 114pp. (in Persian with English summary).

MASSOUMI SHAREBABAK, H. and A. KARIMI, 1991. Camparison between AMV infection levels in potato fields lying near alfalfa fields and those lying far from them. Proceedings of the tenth Plant Protection Congress of Iran 1-5 sept Kerman Iran 178pp. (in Persian with English summary).

MASSOUMI SHAREBABAK, H. and G. H. MOSAHEBI-MOHAMAD, 1991. Investigation on alfalfa mosaic virus isolates on potato in Karadj, Damavand, Varamin and Hamedan areas. Proceedings of the tenth Plant Protection Congress of Iran 1-5 sept Kerman Iran, 177 pp. (in Persian with English summary).

RAMAN, K. V., 1985. Transmission of potato viruses by aphids. Technical Information Bulletin. Internationnal Potato Center. Lima Peru. 23pp.

REZWANI, A., 2001. Key to the aphids (Homoptera: Aphidinea) In Iran. ministery of Jihad-e-Agricultare. Agricultural Research, Education and Extention Organization. 304pp.

(in Persian with English summary).

REZWANI, A., F. TERMEH. and M. MOSAVI, 1994. Iranian Aphids and Hosts. Plant Pests & Disiseas Research Institute. 63 pp. (in Persian with English summary).

RONGAI, D. and C. CERATO, 1997. Forcasting the best time for the desication of seed potato. Information-Agrario, 1997. 53: 17, 51-56.

SALAZAR, L. F., 1996. Potato viruses and their control. International Potato Center (CIP), Lima, peru. 66 pp.

SEYEDOLESLAMI, H., D. DANESH., A. NADERI and A. ESLAMI, 1995. Alata aphid monitoring for selection of potential seed potato production districts in Esfahan and Chahar mahal & Bakhtiari provinces of Iran. Iranian Journal of Agricultural Science. 26 (3): 19-35. (in Persian with English summary).

SIGVALD, R., 1984. The relative efficiency of some aphid species as vectors of potato viruses (PVYO). Potato Research 27: 285-299.

SIGVALD, R., 1985. Relationship between occurrence and spread of potato virus (PVY) in field experiment in southern sweden. Journal of Applied Entomology. 19. 35-43.

TAHTACIOGLU, L. and H. OZBEK, 1997. Monitoring Aphids species and their population change on potato crop in Erzurum (Turkey) province throughout the growing season. Turkey Entomology Dergisi. East Anatoli, 21(1), 9-25.

VAN HARTEN, A., 1979. The relationship between aphid flights and the spread of potato virus Y (PVY) in the Netherland. Potato Research 26:1-15.

VERZOLA, E. A., T. A. KHAYAD, 1995. *Aphis* incidence in selected potato growing areas. Phillippines Journal of Crop Science. ABS.

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