

Investigating efficacy of flaming compared to common methods of weed control in seeded onion fields

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ABSTRACT

Efficacy of flaming was compared to common methods of weed control in onion fields during the years of 1999 and 2000, in E.Azarbijan. The experiments were conducted in the framework of Randomised Complete Block Design with 10 treatments and 4 replications. The treatments included ioxynl (as Totril 22.5%) + sethoxydim (as Nabu-S 12.5%) at 3+3 l/ha postemergence with and without one hand weeding; chlorthal dimethyl (as Dacthal 75%) at 12kg /ha preemergence with and without one hand weeding; paraquat (20%) at 3 l/ha, postemergence of weeds when onions were at 5cm stage, with and without hand weeding; flaming at the pace of 0.25 m/second, postemergence of weeds and when onions were 5cm high; weedy and weed free checks. Results showed that all treatments plus one hand weeding controlled weeds effectively and boosted yields. It is, therefore, concluded that flaming can replace herbicides in onion fields.

Keywords: onions, weeds, herbicides, flaming

References

- ANONYMOUS, 2003. A quick guide to weed control with a RED DRAGON torch. [online]: flame @ flameengineering. com. Access March 2nd, 2003.
- ASCARD, J. 1989. Thermal weed control with flameing in onions. Swidish Crop Protection Conf. Vol.2,35-47.
- ASCARD, J.1988.Thermal weed control in flame treatment is a useful method for row-cultivated crops and haulm killing in potatoes. In:Weeds and weed control, 29th Swidish Conf. Vol 1, pp.194-207.
- ASCARD, J., and R.R,BELLINDER. 1996. Mechanical in-row cultivation in row crops. In:Proc. 2nd Int. Wd Control Cong., Copenhagen, 1121-1126.

- BALSARI, P. 1991. Experimental results of an integrated weed control system. Proc. Int. Seminar of 1st, 2nd and 3rd Tech. Sec. of CIGR on environmental challenges and solutions in agricultural engineering. pp. 239-246.
- BALSARI, P., R. BEERRUTO; and A. FERRO. 1994. Flame weed control in lettuce. Acta Horticulturae, No. 370, pp. 213-222.
- DIVER, S. 2003. Flame weeding for vegetable crops. [on line]: [attra.ncat.org /attra-Pub/PDF/flameweedveg. pdf](http://attra.ncat.org/attra-Pub/PDF/flameweedveg.pdf). Access March 15th, 2003.
- HOLMOY, R. and J. BOTLAND. 1994. Band spraying, selective flame weeding, and hoeing in late white cabbage, Part I. Acta Horticulturae. 372, 234-235.
- MELANDER, B. 1998. Interactions between soil cultivation in darkness, flaming, and brush weeding when used for in-row weed control in vegetables. Biological Horticulture and agriculture, 16(1), 1-14.
- MELANDER, B. and G. RASMUSSEN. 2001. Effects of cultural methods and physical weed control in intrarow weed numbers, manual weeding and marketable yield in direct-sown leek and bulb onion. Weed Research, 41, 491-508.
- MOSALLA-NEJAD, H., M., NOROOZIAN, and A. MOHAMMAD-BEIGY, 2002. Important pests, diseases and weeds and recommendations for their control. Plant Protection organization. (In Farsi).
- NETLAND, J.; G. Balvoll; and R. HOLMPY. 1994. Band spraying, selective flame weeding, and hoeing in late white cabbage. Part II. Acta Horticulturae. 372, 235-243.
- PARISH, S. 1990. A review of non-chemical control techniques. Biological Agriculture and Horticulture. 7. 117-137.
- TIE, F.; J. ASCARD; D. T. BAUMANN; J. P. CAUSSANEL; A. DOBRZANSKI, R. J. FROUND-WILLIAMS, Y. KLEIFELD; A. PARDOLGLESIAS; F. ROCHA; P. RUUTTUNEN; S. B. RZOZI; T. SANSEOVIC; and L. SUSO. 1990. Weed and weed management in onion – a review. Eleventh EWRS symposium- Basel.
- VESTER, J. 1988. Flame cultivation for weed control in vegetable production. Proc. meet. EC. Experts Group, Stuttgart, Germany. pp. 153-167.

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