



International Workshop on Food Safety
in a Sustainable Postharvest System of Agricultural Products
October 16-18, 2007 Kahramanmaraş Sütçü İmam University
Kahramanmaraş/TURKEY



EFFECT OF EXPOSURE OF *NIGELLA SATIVA* SEEDS AND SEEDLINGS TO MICROWAVES ON THE GROWTH OF PLANT AND CALLUS

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The research included the effect of microwaves on *Nigella sativa* seedlings, which were grown on the culture media for germination of seeds and seedling growth. This included exposure of seeds to microwaves for different periods. The results showed that the germination percent of seeds exposed to microwaves for (100) minutes, was nearly that of the seeds in the control treatment; it reached to 90%, 94% respectively, this was after 7 days from culture. Germination percent in the other treatments ranged between 68%-88% .also the mean of seedling length which was grown from seeds exposed to microwaves for 20 and 120 minutes reached 2.5 and 2.4 cm respectively ,and so it is closely to 2.6 cm for the control treatment. On the other hand, the results cleared that the seedling explants exposed to microwaves, varied by their response for callus initiation that is after 20 days from culture. The explants in the control treatment showed good (+++) response, while in the other treatments where explants exposed to microwaves showed less (++) response than the control .except that exposed for (100) minutes, the response was similar to that of the control. The fresh weight of callus grown for 45 days from explants exposed to microwaves for 20 and 40 minutes were 2.0 and 2.1 gram respectively compared with 2.3 gram for the control. In spite that the maximum fresh weight of callus gained in this study which was 6.8 gram after 70 days growth from explants exposed for 80 minutes to microwaves, but it is still less than 8.5 gram for the control.

Key words: *Nigella sativa*, seeds, germination, microwave, callus, seedling