

UTILIZATION OF SOLAR COLLECTOR FOR TREATMENT OF PLANT GROWTH SUBSTRATES

R.Ghini(1), W.Bettiol(1), G.Armond(2), C.A.S.Braga(2) and M.Inamoto(3).
(1)EMBRAPA/CNPDA, P.O.Box 69, Jaguariuna-SP, 13820. (2)DEA/IAC, P.O.Box 16, Jundiai-SP, 13200. (3) ESALQ/USP, P.O.Box 9, Piracicaba-SP, 13400, Brazil

Solar collectors were tested for the control of Meloidogyne arenaria, Sclerotium rolfsii, Verticillium sp. and nut sedge (Cyperus rotundus). Verticillium isolate multiplied on popcorn, soil infested with M. arenaria, sclerotia of S. rolfsii and nodules of nut sedge were mixed with soil and treated for different times in solar collectors. The recovered popcorn seeds and sclerotia were disinfected and transferred to Petri dishes for the evaluation of the pathogen survival. The sedge nodules recovered from treated soil were planted in pots for the evaluation of emergence. Tomato (Lycopersicon esculentum) var. cerasiforme) seedlings were planted in soil infested with M. arenaria and the effect of soil exposure was evaluated by weighing the intact plants, by counting the number of nodules on the root system, and by determining the nematode population before and after the treatment, using the method of fluctuation and centrifugation. The results showed that, depending upon the climatic conditions, two days are required for the desinfestation of soil infested with M. arenaria and Verticillium sp. whereas only one day is required for S. rolfsii and nut sedge, since under the condition of complete solar radiation the substrate reaches temperatures up to 85°C.