

F13-P

MANAGEMENT OF ROOT-KNOT DISEASE OF ONION (*ALLIUM CEPA* L.) CAUSED BY
MELOIDOGYNE GRAMINICOLA

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The rice root-knot nematode, *Meloidogyne graminicola*, causes root-knot disease of onion in rice-vegetable cropping system. Greenhouse and/or replicated on-farm trials of different management strategies to reduce the population of *M. graminicola* were conducted. Host suitability studies showed that all types and cultivars of onion tested were susceptible to the nematode. Wheat, soybean, garden pea, mustard, winged bean, pechay, Chinese cabbage, lettuce, and snap bean were also good hosts. Pepper, cucumber, mungbean, corn, peanut, sitao, cowpea, and members of Cucurbitaceae and Solanaceae (except tomato) were poor hosts and potential rotation crops in rice-onion system. Soil amendment with organic fertilizer or compost had no effect on nematode population and onion yield. Farmer's practice of land preparation reduced initial soil population densities (Pi) but did not affect onion yield. Surface firing by rice hull burning (RHB) reduced Pi and increased onion yield. Increasing the thickness of rice hulls from 15 cm deep to 30 cm deep increased yield by 44% over no RHB and 12% over 15-cm deep rice hulls. It also produced 38% more large bulbs for export over 15-cm deep burned rice hulls and 152% over no RHB. Soil organic matter, phosphorus, and exchangeable potassium increased in plots with burned rice hulls. Integration of crop rotation with nonhost crops, good land preparation, and rice hull burning is an important approach to manage root-knot disease in rice-onion system in areas where there is an abundant supply of rice hulls.