

黑膜覆盖控制黄瓜根结线虫 (*Meloidogyne incognita*) 的效果

Effect of controlling root knot nematode (*Meloidogyne incognita*) of cucumber by soil solarization under black plastic film mulching

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英文关键词: root knot nematode; black plastic mulching; soil solarization; cucumber

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中文摘要:

从土壤线虫含量、根结级别和黄瓜生长与产量等方面分析了黑膜覆盖控制黄瓜根结线虫的效果。结果显示, 黑膜覆盖消毒并经过一个黄瓜生长季以后, 土壤5、10、15、20、30 cm线虫数量比对照减少26.9%、13.9%、2.9%、1.9%和0.9%。控制效果随土壤深度增加而下降, 同时植物寄生线虫数量减少5%。根结线虫主要分布在0~30 cm土层, 占总量的97.7%~98.5%。从对根系的危害来看, 覆黑膜后黄瓜根结线虫的发病程度比对照明显下降, 为害为I级, 而对常规药剂消毒的植株根系为害达到IV级。黑膜覆盖消毒不仅使黄瓜

英文摘要:

Based on the population of root knot nematode in soil, degree of root knot and growth and yield of cucumber, this paper studied on control effect of soil solarization by black plastic film mulching on root knot nematode (*Meloidogyne incognita*) of cucumber. Results showed that the population of root knot nematode in solarized soil at 5 cm, 10 cm, 15 cm, 20 cm, 30 cm decreased by 26.9%, 13.9%, 2.9%, 1.9% and 0.9% compared with the check, unsolarized and disinfested by chemical nematicides, even after a growing season. The controlling effect decreased with the soil depth. Also, the number of phyto parasitic nematodes decreased by 5%. The nematodes, declining in number with soil depth, mainly distributed in 0~30 cm and accounted for 97.7%~98.5% of the total. The damage to root growth of the solarized(the I degree) group was significantly lower than that of the check(the IV degree). The soil solarization increased not only the cucumber yield, but also quality. Meanwhile, the cost of the solarization with plastic film mulch was 57% less than that of the check, and it is environmentally friendly. Though the unsatisfactory effect revealed by the number of the nematodes, the controlling effect of solarization was better than that of the check in growth, yield and content of root knot nematode. This suggested that the control of root knot nematodes by solarization with black plastic film mulch was characterized by the decreased vigor, infectibility and the delayed infection. It is preliminarily concluded that soil solarization for 40 d under the wet weather can effectively control the incidence and damage of root knot nematode.

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