

0.5%阿维菌素颗粒剂防治黄瓜根结线虫病药效试验

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摘要:以“津东8号”黄瓜为试材,以清水为对照,研究了泰安市现代农业科技有限公司生产的不同浓度的0.5%阿维菌素颗粒剂与深圳诺普信农化股份有限公司生产的0.5%阿维菌素颗粒剂对黄瓜根结线虫病的田间药效。结果表明:泰安市现代农业科技有限公司生产的0.5%阿维菌素颗粒剂2 000、3 000、3 500 g/667m²对黄瓜根结线虫病的防效在66.61%~74.63%之间,3 000 g/667m²相同剂量下的2个厂家的0.5%阿维菌素颗粒剂防效差异不显著。

关键词:0.5%阿维菌素颗粒剂;黄瓜根结线虫病;药效

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黄瓜根结线虫病是近几年黄瓜生产、特别是保护地黄瓜生产中发生比较严重的一种虫害。种植时间在3 a以上的温室及塑料大棚发生比较严重,病株率一般为40%,严重的病株率达100%,给黄瓜生产造成了巨大损失。为有效防治黄瓜根结线虫病,课题组于2010年9月在河北省武邑县审坡镇蔬菜园区的冬暖式大棚内进行了2个厂家生产的0.5%阿维菌素颗粒剂防治黄瓜根结线虫病的田间药效试验,供生产参考。

1 材料与方法

1.1 试验材料

黄瓜品种为“津冬8号”,试验地前茬作物也为黄瓜,棚室内水肥条件好,栽培管理条件均匀一致,棚室内黄瓜根结线虫(*Meloidogyne incognita* Chitwood)发生严重。试验药剂为0.5%阿维菌素颗粒剂(泰安市现代农

业科技有限公司生产),0.5%阿维菌素颗粒剂(深圳诺普信农化股份有限公司生产)。

1.2 试验方法

试验在河北省武邑县审坡镇蔬菜园区的冬暖式大棚内进行,棚室内土壤肥力水平较高,土质为轻壤质褐土,有机质含量2.4%,试验田内有少量杂草。施药当天天气晴朗,最高气温31.5℃,最低气温18.5℃,平均气温24.0℃,相对湿度86%,日照时数11.4 h。2010年9月28日施药,按要求将0.5%阿维菌素颗粒剂不同剂量均匀撒施于沟底及沟底周围土壤,施药后覆土(共施药1次)。试验共设4个处理,泰安市现代农业科技有限公司生产的0.5%阿维菌素颗粒剂设3个剂量处理,分别为2 000、3 000、3 500 g/667m²(简称T1、T2、T3),深圳诺普信农化股份有限公司生产的0.5%阿维菌素颗粒剂剂量为3 000 g/667m²(简称S),以清水为对照,每个处理4次重复,计20个试验小区,小区随机区组排列,每小区面积10 m²。

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Abstract: The representative pear trees were selected to observe the life history and the biological property of the *Phenacoccus mespili* (Geoffroy) in Korla area. The results showed that there were 3 generations per year in Korla pears, the nymph overwintered under the raise bark, or within crevice-bark. The first generation grow and developd evenly, and the egg's peak appeared during mid-July, the activity peak of the 1st instar nymph was at later of June; the second and third generations had the overlapped generations, the egg incubation peak of the third generation were in middle late September. There were oocysts when the adults began to lay eggs, and there were 15~315 eggs of one egg mass. The newly-hatched nymph was adept in crawl; Sucking the juice of the branches and trunk by the nymph and adult cause the growth weak of the tree, which usually attached themselves to calyx hollow, and the rate of the commodity fruit was reduced.

Key words: *Phenacoccus mespili* (Geoffroy); life history; life habit; distribution and infestation.

1.3 调查方法

每小区五点取样,每点定点调查 2 株,按根结线虫分级标准调查病情,统计病情指数。分级标准:0 级:根系健康,无根结;1 级:根系只有少量根结,占全根系的 1%~25%;3 级:根系根结数量中等,占全根系的 26%~50%;5 级:根系根结数量很多,占全根系的 51%~75%;7 级:根系根结数量特多,占全根系的 76%~100%。

2 结果与分析

由表 1 可知,施药后 30 d,2 种供试药剂的防效均较好,T1、T2、T3 的病情指数分别为 13.42、10.61、10.17,防效分别为 66.61%、73.49%、74.63%,S 的病情指数为 11.14,防效为 72.29%,对照病情指数为 40.37,各药剂处理后的黄瓜根结线虫病病情指数明显低于清水对照;相同剂量下,T2 处理后的黄瓜根结线虫病病情指数略低于 S 药剂,二者防效接近。

由表 1 还可知,T2 与 S 之间防效差异不显著,T2、T3 与 T1 之间防效差异显著,但未达到极显著水平。

3 结论

试验结果表明,泰安市现代农业科技有限公司生产的 0.5%阿维菌素颗粒剂 2 000、3 000、3 500 g/667m² 防治黄瓜根结线虫病的防效在 66.61%~74.63%之间,相同剂量下泰安市现代农业科技有限公司生产的 0.5%阿维菌素颗粒剂的防效略高于深圳诺普信农化股份有限公

表 1 0.5%阿维菌素颗粒剂防治黄瓜根结线虫病试验结果

处理	重复	病情指数	防效/%	差异显著性
T1	1	14.68	61.98	bA
	2	13.65	65.55	
	3	12.65	71.33	
	4	12.69	67.57	
	平均	13.42	66.61	
T2	1	12.92	66.54	aA
	2	11.23	71.66	
	3	8.52	80.69	
	4	9.75	75.08	
	平均	10.61	73.49	
T3	1	12.21	68.38	aA
	2	10.79	72.77	
	3	8.85	79.95	
	4	8.83	77.43	
	平均	10.17	74.63	
S	1	12.14	68.56	aA
	2	10.25	74.13	
	3	10.92	75.25	
	4	11.26	71.22	
	平均	11.14	72.29	
清水(CK)	1	38.61	—	—
	2	39.62	—	
	3	44.13	—	
	4	39.13	—	
	平均	40.37	—	

司生产的 0.5%阿维菌素颗粒剂,但差异不显著。所以建议在生产上 2 种药剂均可以用于防治黄瓜根结线虫病,防治时期在黄瓜播种期。

Efficacy of 0.5% Granular Abamectin on Cucumber Root Knot Nematode Disease

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Abstract: Taking 'Jindong No 8' cucumber as the experiment material, and water as control, the efficacy of 0.5% granular abamectin of various concentrations made by Tai'an Modern Agricultural Science and Technology Co., Ltd and Shenzhen Noposin Co., Ltd on cucumber root knot nematode in field were studied. The results showed that the efficacy ranged from 66.61%~74.63% when applying 0.5% granular abamectin of various concentrations made by Tai'an Modern Agricultural Science and Technology Co., Ltd in concentration of 2 000, 3 000 and 3 500 g/667m². No significant differences showed when applying 0.5% granular abamectin made by both companies when applying 3 000 g/667m².

Key words: 0.5% granular abamectin; cucumber root knot nematode disease; efficacy