

# 几种杀虫剂对田间大麻跳甲的防治效果

郭丽,王明泽,王殿奎,李泽宇,车野,张海军

(黑龙江省农业科学院 大庆分院,黑龙江 大庆 163316)

**摘要:**为了筛选对大麻跳甲防治效果较好的杀虫剂,研究采用6种不同杀虫剂进行田间药效试验。结果表明:30%混灭·噻嗪酮防治效果最好,施药后1 d防效达到90.5%,施药3、7和14 d后的药效均在87.9%以上,其次是10%啉虫脒,施药后1、3、7和14 d的防治效果分别为85.2%、87.9%、85.5%和84.9%,这两种药剂均表现出较好的速效性和持效性,可作为防治大麻跳甲的有效杀虫剂,且对大麻作物安全性较好。

**关键词:**杀虫剂;工业大麻;跳甲;药效试验

**中图分类号:**S435.63

**文献标识码:**A

**文章编号:**1002-2767(2014)06-0073-02

大麻(*Cannabis sativa* L.)俗称线麻、汉麻、白麻和火麻。大麻种植简便,适应性强,是人类最早培植的作物之一,也是我国传统的天然纤维作物,早在3 500 a前我国就有种植大麻的记载<sup>[1]</sup>。在中国大麻产区,虫害较多,危害较重<sup>[2]</sup>。危害大麻的昆虫有70多种<sup>[3]</sup>,其中大麻跳甲对大麻的危害比较严重。

大麻跳甲(*Psylliodes attenuata* Koch)属鞘翅目,叶甲科,俗称麻跳蚤,广泛分布在世界各地大麻产区。在大麻的整个生育期内均对大麻有危害,以成虫在杂草丛或植物残株间越冬,翌年越冬成虫聚集在幼嫩的心叶上为害大麻幼苗,把麻叶食成很多小孔,严重的造成麻叶枯萎<sup>[4]</sup>,导致植株死亡。对大麻幼苗期危害最为严重,是造成工业大麻减产、甚至绝产的主要害虫之一。该研究通过田间试验筛选防治大麻跳甲的药剂,为指导生产上的防治提供依据。

## 1 材料与方法

### 1.1 材料

供试药剂选用6种常用杀虫药剂,分别为阿维·毒死蜱32.5%(毒死蜱32.2%,阿维菌素0.3%)乳油(昆明云大科技农化有效公司)(处理1)、杀扑磷40%乳油(浙江泰达作物科技有限公司)(处理2)、桃小蛾杀20%乳油(河北军星生物化工有限公司)(处理3)、混灭·噻嗪酮30%(混灭

威25%噻嗪酮5%)乳油(江苏东宝农药化工有限公司)(处理4)、氯·辛20%(氯氰菊酯1.5%辛硫磷18.5%)乳油(商丘永佳精细化工)(处理5)、啉虫脒10%可湿性粉剂(天津市华宇农药有限公司)(处理6);对照药剂为90%晶体敌百虫(湖北沙隆达有限公司)(处理7);对照为清水(处理8);供试作物品种为工业大麻尤纱31。

### 1.2 方法

**1.2.1 试验设计** 试验于2013年在黑龙江省农业科学院大庆分院红旗泡试验基地进行。试验地土壤为碳酸盐草甸黑钙土,肥力中等,排灌条件良好。试验共设8个处理,处理1:32.5%阿维·毒死蜱2 000倍液;处理2:40%杀扑磷1 000倍液;处理3:20%桃小蛾杀2 500倍液;处理4:30%混灭·噻嗪酮1 500倍液;处理5:20%氯·辛1 000倍液;处理6:10%啉虫脒180 g·hm<sup>-2</sup>;处理7:敌百虫对照;处理8:清水对照。小区面积20 m<sup>2</sup>,3次重复,随机区组排列。大麻出苗后21 d(6月11日)进行人工常规喷雾。

**1.2.2 调查项目及方法** 采用5点取样法调查,每点调查1株,每小区共计5株,记录被害株数和活虫数。施药前调查虫口基数,施药后1、3、7及14 d调查残留活虫数,按公式计算虫口减退率和校正防效。施药后跟踪调查麻株生长情况,确定药剂的安全性。

$$\text{虫口减退率(杀虫率)}(\%) = \frac{(\text{药有虫口数} - \text{药后虫口数})}{\text{药前虫口数}} \times 100$$

$$\text{校正防效}(\%) = \frac{(\text{处理区虫口减退率} - \text{对照区虫口减退率})}{(100 - \text{对照区虫口减退率})} \times$$

收稿日期:2014-01-24

基金项目:国家麻类产业技术体系建设专项资金资助项目(CARS-19-S04)

第一作者简介:郭丽(1981-),女,黑龙江省双城市人,硕士,助理研究员,从事大麻育种栽培研究。E-mail:guoli1981w@sina.com。

## 2 结果与分析

### 2.1 药剂对作物的安全性

在施药后 1、3、7、14 d 的跟踪调查结果表明,大麻幼苗生长正常,各种药剂对大麻植株生长无任何药害等不良影响,表明各供试药剂对大麻作物的安全性较好。

### 2.2 不同药剂处理对大麻跳甲的防治效果

从施药后 1、3、7 和 14 d 的调查结果可知,不同药剂处理对大麻跳甲防治效果不同,用药后 1 d,防效由高到低依次是混灭·噻嗪酮 90.5%、阿维·毒死蜱 88.4%、啉虫脲 85.2%、桃小蛾杀 75.9%、敌百虫对照 70.2%、氯·辛 56.0% 和杀扑

磷 53.1%,防治效果较好的有混灭·噻嗪酮、阿维·毒死蜱和啉虫脲,且与其它药剂处理防效差异显著,对防治大麻跳甲均表现出良好的速效性;用药 3、7、14 d 后,混灭·噻嗪酮和啉虫脲对大麻跳甲的防效略有降低,但降低幅度不大,防治效果一直在 85% 以上,表现出良好的持效性;阿维·毒死蜱在用药 3 d 后药效逐渐降低,并且降低幅度比较大,持效性较差。

综合试验结果,6 种药剂中对大麻跳甲防治效果较好的是混灭·噻嗪酮和啉虫脲,田间试验中均表现出较好的速效性和持效性。

表 1 不同药剂处理对大麻跳甲的防治效果

Table 1 Control effect of different pharmaceutical treatment for *Psylliodes attenuate*

施药处理 Pesticide treatments	药前虫 口基数/头 Prodrug insect on base	药后 1 d One day after the drug		药后 3 d Three days after the drug		药后 7 d Seven days after the drug		药后 14 d Fourteen days after the drug	
		活虫数/头 Number of live insects	防效/% Control effect	活虫数/头 Number of live insects	防效/% Control effect	活虫数/头 Number of live insects	防效/% Control effect	活虫数/头 Number of live insects	防效/% Control effect
1	23.67	2.33	88.4 ab	4.00	82.5 ab	4.33	77.6 ab	5.67	74.7 abc
2	16.33	6.67	53.1 d	7.33	54.5 cd	6.00	54.7 c	6.33	60.2 d
3	19.67	4.33	75.9 bc	3.67	80.2 ab	6.67	56.6 c	5.33	71.7 bcd
4	24.33	2.00	90.5 a	2.33	90.2 a	3.00	87.9 a	3.00	87.9 a
5	17.00	6.67	56.0 d	8.00	50.5 d	7.33	48.0 c	8.67	46.3 e
6	25.00	3.33	85.2 ab	3.00	87.9 a	2.67	85.5 ab	3.67	84.9 ab
7	21.67	5.67	70.2 c	6.33	69.1 bc	6.00	65.9 bc	7.33	65.0 cd
8	19.33	17.33	—	19.00	—	16.00	—	19.00	—

注:表中同列字母表示 0.05 水平差异显著。

Note: The lowercases mean significant difference at 0.05 level.

## 3 结论

试验结果表明,30%混灭·噻嗪酮和10%啉虫脲防治大麻田跳甲效果较好,表现出较好的速效性和持效性,并且对大麻作物安全,可以作为大麻跳甲的防治药剂使用。

### 参考文献:

[1] 王殿奎,关凤芝.黑龙江省大麻生产现状及发展对策[J].中

国麻业,2005,27(2):98-101.

[2] 许艳萍,杨明,郭宏彦,等.昆明地区工业大麻病虫害及其防治技术[J].云南农业科技,2006(4):46-47.

[3] 关凤芝.大麻遗传育种与栽培技术[M].哈尔滨:黑龙江人民出版社,2010:391.

[4] 中国农药第一网.大麻跳甲[EB/OL].<http://www.non-gyao001.com/insects/show-810.html>,2011-08-25.

(下转第 81 页)

## Effect of Different Factors on Superovulation of Anhui White Goat

LIU Ya-li<sup>1</sup>, LI Yun-sheng<sup>1,2,3</sup>, ZHANG Mei-lin<sup>1,4</sup>, CHEN Zhen<sup>1</sup>, ZHAN Nian<sup>1</sup>,  
ZHANG Xiao-rong<sup>1,2,3</sup>, LIU Ya<sup>1,2,3</sup>

(1. College of Animal Sciences and Technology, Anhui Agricultural University, Hefei, Anhui 230036; 2. Anhui Provincial Laboratory for Local Livestock and Poultry Genetic Resource Conservation and Bio-Breeding, Hefei, Anhui 230036; 3. Engineering Research Center of Reproduction and Breeding in Goat of Anhui Province, Hefei, Anhui 230036; 4. Maternal and Child Health Hospital of Anhui Province, Hefei, Anhui 230000)

**Abstract:** To obtain more oocytes from Anhui white goat for transgenic study, the effects of season, dornors' pregnancy and the source of CIDR on superovulation in Anhui white goat were investigated. The results showed that when synchronized with domestic CIDR, average number of ovulated oocytes and colleted fertilized oocytes per donor were  $15.0 \pm 7.62$  and  $14.6 \pm 7.88$  respectively, and fertilization rate was 97.3%, while synchronized with imported CIDR, average number of ovulated oocytes and colleted fertilized oocytes per donor were  $11.0 \pm 5.38$  and  $10.8 \pm 5.16$  respectively, and fertilization rate was 98.2%, there was no significant difference between the two groups ( $P > 0.05$ ); Average number of collected oocytes per donor were  $13.71 \pm 6.28$ ,  $16.54 \pm 7.43$  and  $13.95 \pm 6.15$  respectively when superovulated in spring, autumn and winter, there was no significant difference between any seasons ( $P > 0.05$ ); Average number of ovulated oocytes in pregnant and nonpregnant dornors were 14.0 and 15.2 respectively, there was no significant difference between two groups, but the fertilization rate of oocytes collected from pregnant dorors was lower than that of non-prenant dornors significantly ( $P < 0.05$ ).

**Key words:** goat; superovulation; CIDR; season; pregnancy

(该文作者还有张运海、杨宏星、吴蓉花,单位同第一作者;方富贵、曹鸿国,单位同第二作者)

(上接第 74 页)

## Control Effects of Several Kinds of Pesticides Against *Psylliodes attenuata* Koch in the Field

GUO Li, WANG Ming-ze, WANG Dian-kui, LI Ze-yu, CHE Ye, ZHANG Hai-jun

(Daqing Branch of Heilongjiang Academy of Agricultural Sciences, Daqing, Heilongjiang 163316)

**Abstract:** In order to screen the pesticide with better control effect against *Psylliodes attenuata* Koch to guide the industrial hemp production, taking six kinds of pesticides as experimental materials which were used to observe the field control effect. The results showed that the control effect of 30% Dimethacarb•Buprofezin was the best, the control effect for 1 day after applying was 90.48%. The control effect for 3, 7 and 14 d after applying had been all over 87.88%. And the control effect of 10% Acetamiprid was better which were 85.17%, 87.94%, 85.53% and 85.17% after applying for 1, 3, 7 and 14 d respectively. These two kinds of pesticides both displayed better availability and effectiveness, they could be used as suitable pesticides against *Psylliodes attenuata* Koch, and the security of hemp field was better.

**Key words:** pesticides; hemp; *Psylliodes attenuata* Koch; pharmacodynamics test