ISSN: 2977-0041

Review Article

Journal of Material Sciences and Engineering Technology

Chemistry Control of Peach Fruit Moth and Agriculture High-Quality Development

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Received: November 24, 2025; **Accepted:** December 01, 2025; **Published:** December 08, 2025

ABSTRACT

Peach fruit moth (Carposina sasakii Matsumura) is the most important insect to influence the quality of red plum apricot and difficulty to control. To control the damage of peach fruit moth on the fruit of red plum apricot and increase the income of local farmer, the experiment of controlling peach fruit moth on red plum apricot using high efficiency chlorine Cypermethrin was conducted in 2009.There were 34 red plum apricot strains in the experiment orchard.The 33 of them is spayied by 2000 times high efficiency chlorine Cypermethrin and 1 is not spayied by high efficiency chlorine Cypermethr. The effect was investigated in the harvest. The pesticide residues of fruits using high-efficiency cypermethrin was analyzed in 2019. The result showed that there is almost not insect in the control experiment fruit but there is not quality fruit in control fruit, which showed that the method using high efficiency chlorine Cypermethrin to control the Peach fruit moth is a good method because the effect of Cypermethrin on controlling peach fruit moth is good and the pesticide residues is low. The high-efficiency cypermethrin against peach fruit moth was a safe, reliable and effective method.

Keywords: Agriculture High-Quality Development, Peach Fruit Moth, Chemistry Control, Cypermethrin, Red Plum Apricot

Introduction

Mei apricot in Mei, China was transplanted in 1987 in in National high-quality red plum apricot demonstration area from Shaanxi fruit institute. After a couple of years compared experiment study from 1987 to 1991. The fruit quality of Mei apricot has changed. The changed Mei apricot had been named red plum apricot because the red plum apricot is selected as a new kind variety of deciduous fruit tree apricot and the best cash forest in semiarid loess hilly regions, China [1].

The shape of red plum apricot fruit is about round and looks beautiful. Red plum apricot fruit is big. The fruit weight of red plum apricot per single fruit weight is about 60 g. The apricot is rich in juice, soluble solids content (14.3%), potassium (410.8 mg per 100 g), selenium and Vc (8.3 mg per 100 g). The potassium content of red plum apricot is higher than that of apple (Malus domedtia), pear (Pyrus), peach (Amygdalus persica) and grape (Vitis vinifera).

Since 1995, the distribution area of red plum apricot spreads from Guyuan county to the whole Ningxia, and then to Gansu province and so on in the most of the water-limited regions, China, the yield, benefits and planting area of red plum apricot increase doubly.

The Harmfulness of Peach Fruit Moth on Red Plum Apricot Fruit

In July, 2008, when author lead his graduate student to investigate in these areas, He encountered a consumer in Shanghuang village, Guyuan City, Ningxia Hui Autonomous Region, who pick up 100 kg of red plum apricot from an orchard in Shanghuang Village, among which 77 kg of red plum apricot were damaged by peach fruit moth and the fruit damage rate

Citation: Zhongsheng Guo. Chemistry Control of Peach Fruit Moth and Agriculture High-Quality Development. J Mat Sci Eng Technol. 2025. 3(4): 1-3.
DOI: doi.org/10.61440/JMSET.2025.v3.89

reached 67%, which showed that peach fruit moth did serious harm to quality of red plum apricot. To solve the influence of peach fruit moth (Carposina sasakii Matsumura) on red plum apricot, the control method of peach fruit moth on red plum apricot fruit was conducted in the Shanghuang Village.

The Control of Peach Fruit Moth on Red Plum Apricot Fruit

Shanghuang eco-experiment station located in the semiarid loess hilly region of loess plateau, China. In 2009, we set up the Chlorine kung fu, now named as high efficiency chlorine Cypermethrin, control experiment of high efficiency chlorine Cypermethrin on peach fruit moth of the red plum apricot in the orchard in Shanghuang Village. The 13-year-old red plum apricot tree with 3meter time 4 meter is 34 trees. The numbers of 33 trees were sprayed 2000 times high efficiency chlorine Cypermethrin and 1 tree is control (no sprayed).

Generally, on about 20 May, when the temperature becomes high to about 20 degrees centigrade on about 20 May,see Figure1, the red plum apricot is expanding to 0.8~1 cm in diameter. In this time, the peach fruit moth worm develops in this time because the insect lay eggs on the fruit surface for incubation, and the hatched larvae enter the young fruit red plum apricot. we use high efficiency, low toxicity and 2000 times high efficiency chlorine Cypermethrin solution for the control experiment of the worms to kill the larvae and ensure that the fruit without insect pests, medication. There were 34 strains; However, 99% was not damaged of the fruits of sprayed fruit tree, but 98% of the fruits of unsprayed fruit tree and unsprayed red plum apricot fruit were damaged by peach fruit moth; The effect of spraying fruit is very good [2]. 2019 On July 19, we sampled the products of beta-cypermethrin for control of edible worms and shipped them to Xi 'an Guolian Quality Detection Technology Co., Ltd. for pesticide residue analysis.

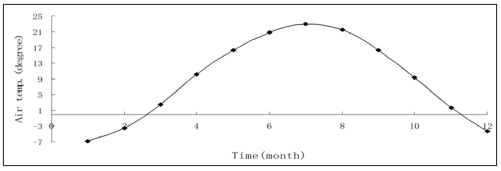

Figure 1: The mean air temperature changes with time in the semiarid loees hilly region (Guyuan, China)

Function and Efficacy of Cypermethrin

Cypermethrin is a kind of broad-spectrum insecticide, which has high insecticidal activity against a variety of pests, and has the effects of touch and stomach toxicity, and the knockout speed is fast and the knockout force is strong. Cypermethrin is used to control agricultural pests through contact and stomach toxicity. The drug has a wide spectrum of insecticidal effects on lepidoptera, homoptera, orthoptera, hemiptera and other pests. High efficiency cypermethrin common control pests: thrips, thorns, diamonds, tobacco green worms, aphids, cotton bollworms, inchworms, red wax scale, cockroaches, mosquitoes, bedbugs, fleas, lice, mites, spot bugs, stink bugs, food bugs, leaf moths, caterpillars, beetles and other pests. High efficiency cypermethrin mainly through spray control of various pests, generally use 4.5% of the dosage form or 5% of the dosage form 1500-2000 times the liquid, or 10% of the dosage form or 100 grams/liter of cream 3000~4000 times the liquid, uniform spray, in the early stages of the pest spraying effect is the best. Cypermethrin has no absorption effect, and the spray must be uniform and thoughtful. The safe harvest interval is generally 10 days. It is toxic to fish, bees and silkworms, and cannot be used in and around bee farms and mulberry gardens, and to avoid contaminating fish ponds, rivers and other waters. I found the method of spraying high-efficiency cypermethrin on the canopy and then popularize the method. Beta-cypermethrin should be used and the economic effect is significant [2].

Figure 2: The flower (left picture) and fruit (right picture) in National high-quality red plum apricot demonstration area in the semiarid loees hilly region (Guyuan, China)

The pesticide residues of Cypermethrin

Since 2017, China put forward high-quality development, red plum apricot must be carried out high-quality production. The high-quality development of agriculture is to take some measures and methods to make the land produce the maximum output and services to meet people's yearning for a better life and the needs of agricultural production services [3,4,5]. on July 19, 2019, we sampled the fruits of high-efficiency cypermethrin against peach fruit moth and sent the samples Xi'an Guolian Quality Detection Technology Co., Ltd. to analyzed the pesticide residues. According to the monitoring report (№ aff190702694), the target cypermethrin and beta cypermethrin were detected according to the national food safety standard maximum residue limits of pesticides in food (GB 2763-2016), and cypermethrin and beta cypermethrin did not be detected (the detection limit was 0.003mg / kg), showing high-efficiency cypermethrin against peach fruit moth was a safe, reliable and effective method.

Conclusion

At present, this practical technology has been widely popularized because the effective of the control of peach fruit moth using Cypermethrin is good. But we still must study the green control method of peach fruit moth to meet the need of peoples ‘for better life and safety and green agriculture product [6].

Acknowledgements

This project is supported by the National Science Foundation of China (No: 41071193, 42077079).

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