

EFFICIENCY OF CHEMICAL PREPARATIONS AGAINST OF EUROPEAN CORN BORER

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Abstract

The analysis of field experiences carried out on revealing efficiency of chemical preparations against of European corn borer (*Ostrinia nubilalis*, Hubner) has been presented. As the chemical preparations "Deluxe Ultra" (10% em.c.), produced by "Top Trade Plyus" company limited (Uzbekistan), "Fufanon" (57% em.c.), produced by "Keminova A/C" firm (Denmark), "Double D" (55% em.c.), produced by "Agrokim" company limited (Uzbekistan) have been chosen and in the open field conditions have been tested. Then the selected for experiences areas with chosen preparations have been treatment two times, which the earlier and later treatments have been called, correspondingly. It has been revealed that the values of the biological efficiency have a rising character in each types of chosen preparations. The most reached efficiency, 95.6%, in the earlier treatment with "Double D" preparation after 5 days of treatment was observed, which after the later treatment was decreased a bit down to 87.6%. The biological efficiency in case of the later treatment was equaled to 100%, that is beginning from this day up to end of the season not a single butterfly of European corn borer was encountered. This situation showed that the used preparations are effective enough in fight against of European corn borer.

Keywords: European corn borer, chemical preparations, biological efficiency.

Introduction

The corn plant has own place between other agricultural ones. This is due to the fact, that on the one side it attracts us because of one has high in calories and tasty and the other side corn's grain, leaf and stem are important food for livestock farming. Because of the corn in any area can be cultivated practically and on the comparable fast period is cultivated this plant creates for its caring essential comfortable conditions.

However, as the other cultivation plants the corn has the damage insects too and if we do not fight against them in a timely manner then the essential part of the cultivating and waiting crop by pests without having time to mature will be killed.

The most dangerous pest between such insects is European corn borer (*Ostrinia nubilalis*, Hubner). This insect mostly in Europe countries and South America was occurred. Except the corn it damages seriously the hemp and millet too. The first generation is developing in later spring and feeds with the corn's leaves and stem. As to the second generation it feeds except them ear and ear's steam too. If the conditions for third generation will be created then the pest except corn damages beats, potatoes and peas too.

Stems damaged by European corn borer's larva will be weaken and even in a weak wild can be broken. The capillary water vessel's system in the corn's steam will be violated. In result the corn's



seed becomes small and the waiting crop is decreased.

The investigations against of European corn borer in the recent period by Russian scientists had been carried out [1]. In this paper the first results on testing the glue traps with LED lamps in the field experiences for monitoring European corn borer in Krasnodar region had been presented. As the standard pheromone traps authors used ones produced by “Shelkovo Agroxim” company limited. In these investigations the pest’s butterflies had been trapped in case of LED lamps to 3.7-12.1 times more than Z (97 % Z11–:3 % E11–14:OAc), E (1 % Z11–:99 % E11–14:OAc) and F1 (ZE) (35 % Z11–:65 % E11–14:OAc) hybrids sex pheromones. It should be there noted that when sex pheromone had been used then only male butterflies had been trapped, as the same time in case of using traps with LED lamps the female butterflies had been trapped too and their composition was 7-49% of all trapped butterflies.

One more feature of these investigations was in that the butterfly’s flight period both in sex pheromone used and traps with LED lamps applied variants were the same dates. The most of trapped butterfly’s period in the LED lamps used variants corresponds to the beginning of flight time, that is, to one week earlier than the female’s oviposition period, as the same time in case of pheromone traps used variants it occurs after one week of the oviposition period.

Analogical investigations in paper [2] had been carried out too. There the quantity of European corn borer’s butterflies in glue traps with LED lamps more almost to one order in comparison of the sex pheromone ones. The analysis of these investigations evidences that using glue traps with LED lamps for monitoring European corn borer in the present time conditions is perspective decision in order to increase the corn culture’s crop.

The distribution, development, damage of this insect and against one’s fight methods in Uzbekistan had been studied too small. The main reason of this situation, in our opinion, in that this pest up to present days in economical safety degree had been observed. However, we must remember that too this insect poses a serious threat in several countries where the development conditions are worse in comparison of Uzbekistan region and there is no guarantee that European corn borer not appears and will not reach the outbreak stage in our cultivating areas. Because using safety methods and quarantine actions in order to prevent that can be not effective. Therefore revealing the development, distribution and damaging degree of European corn borer in our field and climate conditions, and testing against one fight methods are the actual tasks of the plants protection and quarantine branch.

In the present paper we have presented analysis of results of field experiences on development, distribution of European corn borer and testing fight methods against one using chemical preparations.

The investigations in 2022-2023 seasons on fields of Paxtaobod district of Andijon region have been carried out. As the observing cultural plant the pea has been chosen. Experiences in 5 variants and 3 plots in each of variants have been carried out. For the each plot we chose beds with 100 meters length and 60 centimeters width. In order to prevent crossing butterflies between variants ones on 1000-1500 meters distances between themselves have been situated.

As the chemical preparations “Deluxe Ultra” (10% em.c.), produced by “Top Trade Plyus” company limited (Uzbekistan) with 0.25 kilograms/hectare volume norm (variant 1), “Fufanon” (57% em.c.), produced by “Keminova A/C” firm (Denmark) with 1 liter/hectare volume norm (variant 2), “Double D” (55% em.c.), produced by “Agrokim” company limited (Uzbekistan) with



1.5 litter/hectare volume norm (variant 3) have been chosen and in the open field conditions have been tested. As the etalon preparation we used “Karate” (5% em.c.) preparation produced “Singenta Crop Protection AG” company (Switzerland) with 0.2 litter/hectare volume norm (variant 4). In variant 5 we didn’t used chemical preparations, that is it left in control.

Processions two times in during the season have been carried out: in June 17 2022 (earlier procession) and June 25 2022 (later procession). In order to reveal the quantity of pests we used pheromone traps with LED lamps. 4 pheromone traps in each of variants in the same distances have been installed. Herewith the quantities of butterflies of European corn borer caught to pheromone traps before processions and 4, 9 and 15 days after processions have been written. The *biological efficiency (BE)* of reached in the processions has been calculated by Abbott expression:

$$BE = \frac{A - B}{A} \cdot 100\% .$$

Here *A* and *B* are the quantities of pests before and after processions, correspondingly. Results obtained in the experiences in Table 1 have been presented. As we can see from Table that the values of *BE* for each of variants in process of time have a rising tendency. The most *BE* value reached after the earlier procession (95.6 %) in variant 3 with “Double D” preparation, 55 % em.c. has been obtained. It should be noted that the efficiency of this preparation after the later procession have been decreased a little down to 87.6 %. This situation, in our opinion, is accidentally result and maybe deals with the small quantity of butterflies.

The values for *BE* reached with preparations of variants 1, 2 and 4 in case of latter processions was 100 %, that is not a single butterfly of European corn borer from this day up to end of the season was seen. This fact demonstrates that the chemical preparations used in these variants are enough effective in fight against of the pest.

References

1. Grushevaya I.V. and et al. LED trap for monitoring European corn borer *Ostrinia nubilalis*: experience results in Krasnodar region // Vestnik zashiti rastenii. 4(102) – 2019, p. 49–54.
2. Frolov A.N. et al. LEDs and semiochemicals vs. sex pheromones: tests of the European corn borer attractivity in the Krasnodar territory // Plant Protection News, 2020, 103(4), p. 269–273.
3. List of chemical and biologic controlling preparations, defoliants and devices controlling of plants growing plants in agriculture of Republic of Uzbekistan. Tashkent, 2016. «Niso poligraf», 385 p.

