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## PRELIMINARY ACTIONS IN MAKING PHEROMONE CAPTURERS OF MELON FLY

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### ANNOTATION

*The article presents information about fields of agricultural production of the Republic of Karakalpakstan, the increase of the requirement for food as a result of increasing the number of population. It was shown that it is important to synthesize pistil of the pest, which is the basic material, in making pheromone capturers of the most dangerous pest of agricultural crops – melon fly. In this, capturing instrument, collecting orders of worms and pupas with the help of protector small gardens were shown.*

**KEYWORDS:** melon fly, pistil pest, worm, pupa, capturer, small protecting gardens, collecting.

### INTRODUCTION

The Republic of Karakalpakstan is situated in the north-western territory of Uzbekistan, total area is 166 600 km<sup>2</sup>. 415020 ha of the total area is irrigational land, from agricultural crops the following types are being sown: cotton, wheat, maize, rice, legumes crops, oily crops, vegetables, cucurbits crops, potato, fodder crops, intensive gardens, grapes.

As a result of increasing the number of population year by year, today it is one of the actual problems to provide with agricultural products and increase the scale of export of one part. According to the norms of the medicine in order to be healthy each person should eat 113,0 kg vegetables, 19,5 kg cucurbits crops and other products per year [3, 4].

Many problems are met in producing vegetable and cucurbits crops among agricultural crops, mainly damage of diseases and pests during the vegetation period. Especially, melon fly - (*Myiopardalis pardalina* Big.) is widely spread on cucurbits crops and basically damage the fruits. Taking into consideration that if the actions on

controlling the pest are not organized on time, it can damage 98-100 % of the yield, therefore, there is an opportunity of saving the products only by organizing controlling actions.

### THE OBJECT AND METHODOLOGY OF THE RESEARCH

The main object of the research is vegetables, their types, development phases of melon fly. In order to determine developing dynamics of adult phases of the pest flying actions were defined by observing 100 plants (5 plants with 20 samples) in the morning from 5 to 8 [1].

Places of melons, where eggs were laid and damaged, were determined by observing visually. Worms and pupas were collected every 3-5 days with the help of capturers in order to destroy in the mechanical method. Apart from this, egg laid fruits placed to small protecting gardens and there were also worms and pupas collected every 3-5 days.

Pupa samples of the pests were taken from 20 places (in 50x50x30 cm scheme) of the field, located to the special insectariums in order to study wintering



conditions, and in spring they were observed by using special methods of Sh.T.Xujaev [2] by digging the soil.

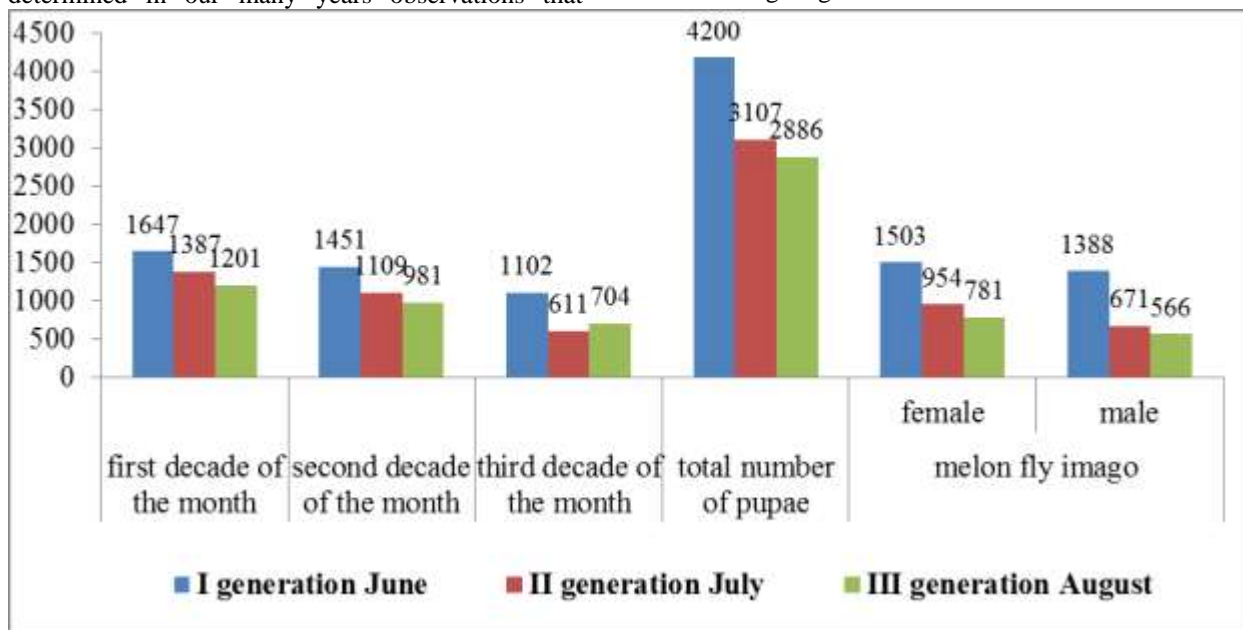
**RESULTS OF THE SCIENTIFIC RESEARCH**

The following works were carried out in the experiment (in 2019-2021): determining the wintering period of melon fly, appearing in vegetable fields, peculiarities of bioecological development, spreading dynamics, collecting worms and pupas by using small protecting gardens and special capturers, collecting adult phases.

As a result, in the northern regions of our republic – Kegeyli, Chimbay and Nukus, where the research works were carried out, melon seeds were sown in the first ten days of May, the period of growing was observed after 7-10 days and it was defined that growing-developing phases continued. It was taken into consideration that melons blossom in the first ten days of June. In the fields, where melon was sown, adults of melon fly appeared in the field on June 3, 2019; June 5, 2020; June 7, 2021. It was determined in our many years observations that

adults of melon fly overwintered in the first ten days of June, gathered in melon fields in the period of blossoming. It was taken into account that pistils and paternities of adult melon flies copulate after 3-4 days. It was defined from the observations that pistils of melon flies copulate more than one time in their life and lay average more than 60-120 eggs. As can be seen from this, pistils of the pest gather in vegetable sown fields and start laying eggs when the fruits become 5-8 cm.

Special capturing instruments were placed to damaged fruits in order to collect worms and pupas which came out from the eggs laid by the first generation of melon fly. Worms come out from the damaged fruit in 10-14 days, turned into the pupa phase inside the capturer. It was known that adult phase of melon fly come out from pupa even after 30 days in laboratory conditions. As a result it was proven that the pest receives fast negative effects of the environment and changes its physiological peculiarity. Results of the experiments in which capturing instruments were used for collecting worms and pupas of the pest from the field, were given in the following diagram number 1.



*Diagram 1. Collecting worms and pupas of melon fly with the help of capturer (200 capturers per 1 ha). 2021*

As can be seen from the diagram collecting worms and pupas of three generation of melon fly by the special instrument which we recommended in our research works of this year was proven to be useful. The effective side of using the method is that in the period of vegetation additional chemical actions on controlling the pest were not conducted. The reason is that generation of the pest was destroyed at the phases of worm, pupa and prevented from the

spreading of next generation. Average 17,0-21,0 worms and pupas were caught in the capturing instruments placed in the field, they were collected into special laboratory containers, and the number of flying pistils and paternities was defined. It was obvious that 2891 adults overflow from total 4200 pupas, which were from laid eggs of the first generation, and the next generations develop from 1503 pistils and 1388 paternities.



3107 pupas collected in capturers from the second generation, 2886 pupas – during the development of the third generation.

In the conducted experiments 7238 adults melon flies overflow from total 10193 pupas, which collected on each generation during our experiments. Pistil melon flies were selected from adult phases, synthesized in the conditions of laboratory and sent to the special laboratory to carry out the works of creating gender pheromones.

In addition to this, worms and pupas were collected with the help of protector instruments in our experiments in order to multiply pistil flies. Fruits placed into small gardens, which protect with artificial method, and collected pistil and paternity – couple of the pest were put there. The experiments determined that average 18,0-23,0 worms and pupas can be collected from average 80-100 small protecting gardens, where adult phases of melon fly were put.

It was taken into consideration that the conducted methods gave two types of results. The first was collecting worms and pupas of melon fly, the second aim is preventing melon fruits placed in small protecting gardens from laying eggs of melon fly adults and preventing the filed from the spreading of the pest.

## CONCLUSION

In the conditions of the Republic of Karakalpakstan melon fly overwinter in the first ten days of June, copulate in the blossoming phase of melon, lay eggs to fruits in order to continue developing. The method of collecting worms and pupas, which came out from the laid eggs, with the help of special capturing instrument or small protecting gardens, before they come into the soil, is considered to be useful. As a result two directions of the requirement were satisfied. The most effective side is that there will be an opportunity of decreasing the number of next generation of melon fly by collecting worms and pupas of overwintered generation. Apart from this, there was a chance to prepare materials, which are necessary for observing developing conditions of the pest, by collecting adult pistils and synthesizing gender pheromones in laboratory conditions.

Therefore, in order to effective use of worms and pupas of melon fly, which develop in melon fields and damage, fruits, where pistils of the first generation laid eggs, should be identified and placed to capturing instruments. Captured worms and pupas are taken into the laboratory and used for preparing gender pheromone elements from pistils.

As a result, the fields are prevented from the development of the next generation and there is created an opportunity of delivering the necessary amount of pistil flies.

## LIST OF THE USED LITERATURE

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