

## Full Length Research

# Methods to Control of Melon Fly Population in the Condition of Karakalpakstan

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**The article presents the period of wintering of melon fly corresponds to the beginning of May, first decade of June in the condition of Karakalpakstan. The role of feeding is shown in the life. It is defined that the level of damage to the type of melon, watermelon of melon fly is high. Results shown that, when using chemical preparations to control pest at imago stage, biological effectiveness was 89,1-96,4%, by using traps at larva, pupa it was 98-100%, when using the destroying method, the main part of first generation were destroyed and crop harvest was saved.**

**Keywords:** Melon fly (*Myiopardalis pardalina* Big), melon (*Cucumis melo* L.), watermelon (*Citullus lanatus* L.), pumpkin (*Cucurbita pepo* L.), varieties, chemical preparations, biological effectiveness, traps.

## INTRODUCTION

Territory of Karakalpakstan is situated in the north-east of the Republic of Uzbekistan, in the lower part of Amudarya. It borders on the north-east side with the Republic of Kazakhstan, east-south side with the Republic of Turkmenistan. It has differences from other territories according to agro-climate, soil, and flora. The agro-climate condition is sharp continental, the coldest temperature in winter is -30 -35°C, the hottest temperature in summer is +40 +45°C, and comparative air moisture is 43-46%.

Despite this kind of condition, as a result of agricultural planting depends on innovative agro-technical methods to ensure high production of agricultural crops and high profitability.

Among the agricultural plants, which are being planted in the territory, there is being planted different kinds of: melon (*Cucumis melo* L.), pumpkin (*Cucurbita pepo* L.), and watermelon (*Citullus lanatus* L.). There are some characteristic differences of plantings on morphological indications, generative, vegetative body.

Our people use vegetables freshly, during the year use saving by redoing as food. According to this reason, the norm of using agricultural products for every people during a year is indicated; medical

amount of using vegetables for a year is indicated as the average 19,5 kg. Taking into account rising of population nowadays, it is required to increase field of vegetables and the amount of receiving productivity.

Also, it is known that the harmfulness level of damages, disasters and weeds is high in receiving high productivity from agricultural plants. As a result of changing ecological factors in environment of our territory; bringing seeds, grafts, fruits of agricultural plants from foreign countries and not correctly organizing of quarantine, kinds of pests, which were not met before, increased, as a result of widening spreading areas the level of damaging is increasing. As a result of scientific-investigation works which are being held in the condition of the territory the following are defined: kinds of greenhouse whitefly (*Trialeurodes vaporariorum* Westw) first time in 1988-1989, aphid of apricot-reed (*Hyalopterus pruni* F) in 1990 [3].

Among these pests, increasing and spreading areas, damage of melon fly, which was first appeared in 2001, stretched to high level in 2-3 years. First investigations were held on pest, which was not known before, in the fields of vegetables of our territory.

**MATERIALS AND METHODS**

Dynamics was studied taking into account changing of the number of pest from the beginning till the end of the period of vegetation and phonogram of development was defined [1, 4, 5].

Laying eggs to different parts of vegetables and wild cantaloupe fruits of melon fly was accounted by looking around the average 30 fruits.

Living condition of the growth phase in the state of additional feeding, not feeding was defined in laboratory conditions by special experiments.

Agro toxic peculiarities of the chemical preparations which used against the pest were defined by Sh.T.Khodzaev's method (1994) [5]. Biological usefulness of the method was defined by the formula Abbot [2].

**Results of the research**

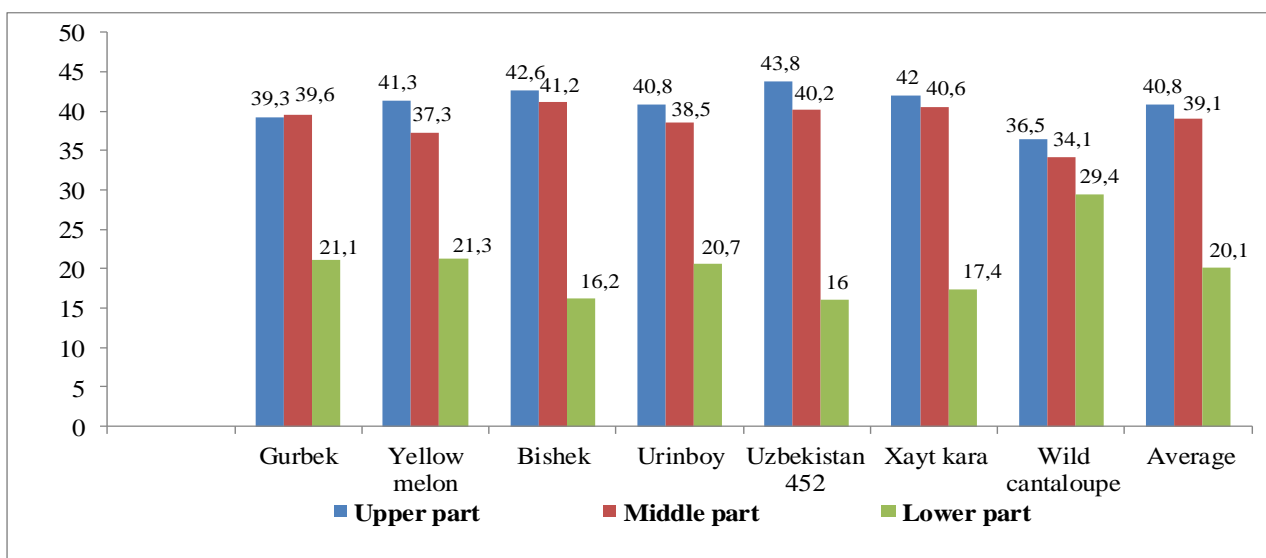
From the years of appearing the pest in the territory, information gathered using information about their morphological indications, phases of development [6, 7]. As a result of this, it is defined that the kind which is spread in our territory is the melon fly of Central Asia or Beludjistan (*Carpomya (Myiopardalis) pardalina Big*). It is known that the pest decreased from vegetables 90-95% melon, 30-45% watermelon, 20-25% cucumber in the first years.

When studying melon fly from the period of appearing, according to the ontogenesis it is a kind of fully developing insects, there are four phases of development: egg, worm, pupa and imago.

The pest is mainly in the phase of pupa in the depth 5-20 cm in soil in winter, in spring when melons blossom first flies start to fly. As a result of the investigation which was held according to this, the first growth phases start to fly on June 2, 2010; June 2, 2011; May 30, 2012; May 31, 2013; June 5, 2014; June 7, 2015; June 3, 2016; June 10, 2017; June 2, 2018; June 3, 2019. After eating additional food, flies pair and start to lay eggs. Female fly lays average 60-110 eggs during her life. Worms appear during 3-7 days from the eggs which laid down the crust of vegetables. Worms eat food during 11-18 days inside the vegetable, carry out doll phase in the depth 3-20 cm of soil. Growth flies start to fly from dolls in 12-18 days and gives generation 3-4 times during the period of vegetation.

Differences of laying eggs to vegetables were studied during the researches. As a result of observations it is defined that in which parts: upper, middle, down of kinds of melon (Gurbek, Yellow melon, Bishek), watermelon (Urinboy, Uzbekistan 452, Xayt kara) lay eggs (Fig 1).

As known from this the following parts of kinds of melon they lay eggs: upper part average 39,3-42,6%, sides of middle part 37,3-41,2%, lower part 16,2-21,3%. Kinds of watermelon upper part average 40,4-43,8%, middle part 38,5-40,6%, rear part 16,0-20,7%. Apart from this eggs laid to upper part 36,5%, middle part 34,1%, rear part 29,4% of wild cantaloupe.



**Figure 1: Laying eggs of melon fly to different parts of vegetables**

Kegeyli, Shimbay, Nukus regions, 2011-2017.

Worms of the pest are white, without legs, length is about 9,0-10,0 mm, at the last segment of the body there are 2 small growers. As a reason of not developing legs, worms move by biting with mouth.

Living condition of the growth of melon fly was studied related to the level of additional eating. Researches were carried out in laboratory conditions where the temperature of air is 25,0-32,0°C, comparative moisture is average 40-60%.

As a result of researches it is known that the growth of the pest lived about 2-10 days in the environment without food, about 6-28 days in the environment where the food is given. Above mentioned information is conformed in observations which carried out in July, August. It is defined from this, that additional food is comfortable condition for the life of the pest and if the fly which come out from the doll eats additional succulent it lives more days and lays eggs actively.

**Table 1:** Result of using chemical preparation against melon fly. Shimbay, Kegeyli, Nukus regions. 200-300 l/h work using liquid. 2011-2017.

Kinds of preparation	Norm of the medicine l/h	Number of the pest before chemical preparation, pieces 100 in plants	Biological usefulness, % in days			
			3	7	14	21
Detsis.2,5% .k.e.	0,7	6,6	82,5	88,7	96,4	73,5
Detsis.2,5% .k.e.	0,4	7,0	82,7	87,7	94,1	73,8
Fufanon 57% k.e.	1,0	7,6	80,4	85,2	89,1	72,9
Fufanon 57% k.e. (example)	0,4	7,6	71,8	81,9	85,9	67,0
Control (without using chemical preparation)		8,0	-	-	-	-

In conclusion, the growths of melon fly, related to temperature of the environment and other abiotic factors appear after winter at the end of May, at the beginning of June in the condition of Karakalpakstan. Mother pests, which ate additional food, lay more eggs to upper part of vegetables.

If the growth of the pest does not eat additional food, it lives 2-10 days, if eats additional food lives 6-28 days and lays about 110 pieces of eggs. 89,1-96,4% usefulness is achieved by using permitted chemical preparation; when using the method of 98-100% destroying by using catchers of worms, dolls, main part of the first generation was destroyed and the harvest is saved.

It is known that nowadays using chemical method against the growth of melon fly gives high result. Scientific-researches are carried out in the aim of increasing profitability rate of this method.

It is defined in the research works that chemical preparations are useful against the growth of melon fly. Information about received results are given in the 1<sup>st</sup> table, it is defined in the table that when melon fly gathered in 100 plants 6,6-8,0, using chemical preparations decreases the number of the growth of pest to minimal level, the next day the number is decreased. After using the method on 14<sup>th</sup> day it was obvious that 85,9-96,4% result is achieved in the field.

The number of pests in the fields where chemical fighting method was used was in the minimal level than the fields where chemical fighting method was not used, it helped to save the harvest

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