

UDC 632.9:632.731+635.25

**BIOLOGICAL SPECIFICS AND HARMFUL ONION THIRPS (*THRIPS TABACI* LIND.) IN THE ONION FIELD IN THE RIGHT-BANK OF THE FOREST-STEPPE OF UKRAINE****Tkalenko G.M., Ignat V.V., Kudla V.V.**

Institute of Plant Protection of National Academy of Agricultural Sciences of Ukraine

Vasilkyvska str., 33, Kyiv, Ukraine, 03022

E-mail: *microbiometod@ukr.net*<https://doi.org/10.32717/0131-0062-2019-66-84-90>

**The aim.** To clarify in the course of peculiarities of biology of onion thrips in the conditions in the Right-bank of the Forest-Steppe of Ukraine, investigating their dynamics of the number and harmfulness of different varieties and hybrids of onion. **Methods.** Researches were conducted common entomology methods. Study results were statistically processed. **Results.** It is established that the departure of imago onion thrips after wintering on crops of onions in the conditions in the Right-Bank of the Forest-Steppe of Ukraine occurs in the second or third decade of April, mass in the first decade of May. It has been studied that at an average daily air temperature of 12,1 13,5 °C embryonic development lasted in 11 13 days, larvae development at a temperature of 12,8 18,2 °C and relative humidity of 63 82% in 13 15 days. Weather conditions were affecting the number of pests generated per year. For example, in 2017, the average humidity was 58 82%, the precipitation amount was 21 mm, and the HTC 0,08 4,1 was developed by only two generations in the year 1934,9 °C. Onion thrips developed in three generations in 2018, marked the development of four generations under more favorable conditions in 2019. The largest population crops of onion thrips to 47,5 % noted the early phase of thickening of leaf bases forming bulbs and bulb formation stage beginning breaking of leaves. Hybrids of onions Banko F<sub>1</sub>, Daiton F<sub>1</sub> and Antylopa F<sub>1</sub> were planted with phytophage up to 35,5 38,0 %, and Ukrainian varieties Khaltседon and Globus are largely (40,0 42,3 %). **Conclusions.** It is clarify the biological specifics of onion thrips in the conditions in the Right-Bank of the Forest-Steppe of Ukraine. It is established that weather conditions significantly affect both the duration of the stages of pest ontogeny. Critical periods of onion organogenesis were studied. It has been investigated that early onion crops reduce the number and damage of phytophage crops.

**Key words:** onion thrips, onion, phytophag, varieties, hybrids, harmfulness**БІОЛОГІЧНІ ОСОБЛИВОСТІ ТА ШКІДЛИВІСТЬ ТРИПСА ЦИБУЛЕВОГО (*THRIPS TABACI* LIND.) НА ПОСІВАХ ЦИБУЛІ РІПЧАСТОЇ В ПРАВОБЕРЕЖНОМУ ЛІСОСТЕПУ УКРАЇНИ****Ткаленко Г.М., Ігнат В.В., Кудла В.В.**

03022

E-mail: *microbiometod@ukr.net***Мета.****Методи.****Результати.**

12,1 13,5 °  
18,2 °  
58 82 %, 82 % 13 1934,9 °

F<sub>1</sub>F<sub>1</sub>F<sub>1</sub>(40,0 42,3 %). **Висновки.****Ключові слова:****Вступ.***Thrips**tabaci* Lind.

(Diadechko N.P., 1964

(Tkalenko G.M., 2011).

*Thrips tabaci* Lind.*Thrips tabaci* Lind.

(Moritz G., 1994; Mound L. A., Marullo R., 1996).

-

-

*Omeliuta* V.P.,*Dulherova* V.O., 1999).*Tkalenko*

G.M., 2008).

**Аналіз останніх досліджень і публікацій з досліджуваної теми.** *Thysanoptera*),*Mulder* S.,*Hoogerbrugge* H., 1999; *Liu Tong-Xian*, 2004).

,

(Klechkovskiy Yu.E., Hlushkova S.O., 2019).

10

(Yarovyi H.I., 2006).

2012). *Symonov* V.Ye, *Romanchenko* V.O.,

92 94

110 120 ).

2.

0,1

2-3

0,9 1,2 / .

(Markula M., Titanen K., 1980; Ramakers P.M.J., 1980; Lindqvist I., Tiittanen K., 1989; Tserkovnaia V.S., Kobak V.S., 2016).

(Omeliuta V.P., 1986).

**Мета досліджень –**

(Yarovyi H.I., 2006):

$=n / N \times 100,$

P

n

N

**Матеріал і методи досліджень.**  
2019

(Dospikhov B.A., 1985).

125  $F_1$  ,  $F_1$   
 $F_1$

**Таблиця 1 –**

|   |  |       |
|---|--|-------|
|   |  |       |
| 0 |  |       |
| 1 |  | 1     |
| 2 |  | 26    |
| 3 |  | > 50% |

MS Exel,

Stat graphics plus.

Trybelia

**Результати досліджень.**

S.O., 2001).

12,1 13,5

18,2

63 82 %

4,1,

2742,1

0,08

84 %, 0,82,



Рисунок 1.  
Lind.)

*Thrips tabaci*

54

2821,9

0,04 2,3.

*Trips tabaci*



Рисунок 2

*Thrips tabaci* Lind.)

47

*Duchovskiene L., 2006).*

F<sub>1</sub>

F<sub>1</sub>

F<sub>1</sub>

).

8,3

Таблиця 2 – Фенологія розвитку трипса цибулевого на посівах цибулі ріпчастої (СФГ «Злагода», Білоцерківський р-н, Київська обл., 2017-2019 рр.)

| Стадія онтогенезу | Місяць та декада |    |     |         |    |     |         |    |     |        |    |     |         |    |     |          |    |     |  |
|-------------------|------------------|----|-----|---------|----|-----|---------|----|-----|--------|----|-----|---------|----|-----|----------|----|-----|--|
|                   | квітень          |    |     | травень |    |     | червень |    |     | липень |    |     | серпень |    |     | вересень |    |     |  |
|                   | I                | II | III | I       | II | III | I       | II | III | I      | II | III | I       | II | III | I        | II | III |  |
| Імаго             |                  | +  | +   |         |    | +   | +       | +  |     |        |    | +   | +       |    |     |          |    | +   |  |
| Яйце              |                  |    | •   |         |    |     | •       | •  |     |        |    |     | •       | •  |     |          |    |     |  |
| Личинка           |                  |    |     |         |    |     |         | —  |     |        |    |     |         |    |     | —        |    |     |  |
| Пронімфа          |                  |    |     |         |    | II  |         |    |     |        | II |     |         |    | II  |          | II |     |  |
| Німфа             |                  |    |     |         |    | M   |         |    |     |        | M  |     |         |    | M   |          | M  |     |  |

Примітка: + - імаго; • - яйце; II - пронімфа; M - німфа

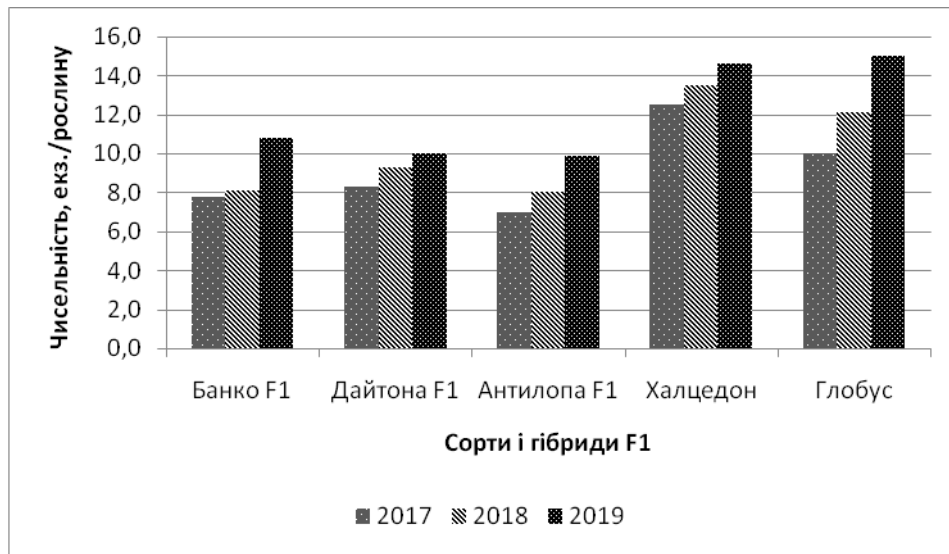


Рис. 3 – *Trips tabaci*

(Asiakyn B.P., Beshanov A.V., Vytskyi V.A., 1986).

10,0 12,5

14,6 15,0

Таблиця 3

2017- )

|      |      |      | F <sub>1</sub> |      | F <sub>1</sub> |      | F <sub>1</sub> |      |
|------|------|------|----------------|------|----------------|------|----------------|------|
|      |      |      |                |      |                |      |                |      |
| 2017 | 20,3 | 30,2 | 25,0           | 37,5 | 19,4           | 26,8 | 15,3           | 22,8 |
| 2018 | 33,2 | 40,3 | 29,4           | 36,1 | 22,8           | 35,9 | 24,6           | 35,2 |
| 2019 | 31,5 | 37,3 | 32,6           | 39,0 | 28,1           | 35,2 | 35,5           | 47,5 |
|      | 28,3 | 35,9 | 29,0           | 37,5 | 23,4           | 32,6 | 25,1           | 35,1 |

20,3 %, F<sub>1</sub> 25,0 %. 35,5 % 3,2 % F<sub>1</sub>

(25

F<sub>1</sub> %.

**Висновки.**

F<sub>1</sub> ,5 %.

(*Trips tabaci* Lind.)

|                  |                |                  |     |    |
|------------------|----------------|------------------|-----|----|
|                  |                |                  |     |    |
|                  | 12,1           | 13,5             |     |    |
|                  |                | 18,2             |     |    |
|                  | 82%            | 13               |     |    |
| :                |                |                  |     | 43 |
|                  |                |                  | 47. |    |
| F <sub>1</sub> , | F <sub>1</sub> | F <sub>1</sub> . |     |    |

## References

- Asiakyn, B.P., Beshanov, A.V., Vytskyi, V.A.* (1986) Ekolohycheskye aspekty zashchyty ovoshchnykh kultur ot vredytelei boleznei y sorniakov [Environmental aspects of protecting vegetables from pests, diseases and weeds]. Trudi VYZR. Leningrad. 110. [in Russian].
- Cho, K., Eckel, C.S., Walgenbach, J.F.* (1995) Comparison of colored sticky traps for monitoring thrips populations (Thysanoptera: Thripidae). *Journal of Entomological Science*. V. 30 (2). P. 176 190.
- Diadechko, N.P.* (1964) Trypsy yly bakhromchatokrylye nasekomye (Thysanoptera) Evropeiskoi chasty SSSR [Thrips, or fringed winged insects (Thysanoptera) of the European part of the USSR]. Kyev: Urozhai. 388 p. [in Ukrainian].
- Dospikhov, B.A.* (1985) Metodyka polevoho opyta [Field Experience Methodology]. Moskva. 335 p. [in Russian].
- Duchovskiene, L.* (2006) The abundance and population dynamics of onion thrips (*Thrips tabaci* Lind.) in leek under field conditions. *Agron. Res. Spec. Issue*. Vol. . 163 166.
- Klechkovskiy, Yu.E., Hlushkova, S.O., Palahina, O.V.* (2019) Trypsy nebezpechni shkidnyky ovochevykh kultur [Tryps are dangerous pests of vegetables]. *Karantyn i zakhyst roslyn*, 2019. -8. P. 5 10. [in Ukrainian].
- Lindqvist, I., Tiittanen, K.* (1989) Biological control of *Thrips tabaci* (Thysanoptera, Thripidae) on greenhouse cucumber. *Acta Entomologica Fennica*. Vol. 53. P. 37 42.
- Liu, Tong-Xian* (2004) Seasonal population dynamics, life stage composition of *Thrips tabaci* (Thysanoptera: Thripidae), and predaceous natural enemies on onionis in South Texas. *Southwest. Entomol.* V. 29. N. 2. P. 127 135.
- Markula, M., Titanen, K.* (1980) Biological control of pest in glasshouse in Finland. *Bulletin SROP*. Vol. III. N. 3. P. 127 134.
- Moritz, G.* (1994) Pictorial key to the economically important species of Thysanoptera in Central Europe. *Bulletin OEPP/EPPO*, Paris. V. 24. P. 181 208.
- Mound, L.A., Marullo, R.* (1996 ) The thrips of central and South America. An introduction (Insecta: Thysanoptera). *Memoirs on Entomology, International, Associated Publishers, Gainesville (US)*. Vol. 6. P.143-146.
- Mound, L. A., Kibby, G.* (1998) *Thysanoptera an identification guide*, CAB, nternational, Wallingford. . 23-25.
- Mulder, S., Hoogerbrugge, H., Altena, K.* (1999) Biological pest control in cucumber in the Nederland. *Bull. OILB. SROP*. P. 177 180.
- Omeliuta, V.P., Dulherova, V.O.* (1999) Trypsy [Tryps]. *Zakhyst roslyn*. Kyiv. N 11. . 20. [in Ukrainian].
- Omeliuta, V.P., Hryhorovych, I.V., Chaban, V.S., ta in.* (1986) Oblik shkidnykiv i khvorob silskohospodarskykh kultur [Accounting for pests and diseases of crops]. Kyiv: Urozhai. 296 p. [in Ukrainian].
- Ramakers, P.M.J.* (1980) Biological control of *Thrips tabaci* (Thysanoptera: Thripidae) with *Amblyseius* spp. (Acari: Phytoseiidae). *Bull. SROP*. V. 3. N. 3. P. 203 207.
- Symonov, V.Ye, Romanchenko, V.O., Chelombitko, A. F., ta in.* (2012) Osoblyvosti vyznachennia trypsiv. *Karantyn i zakhyst roslyn*. N 10. P. 20 23. [in Ukrainian].
- Tkalenko, A.N.* (2008) Vredytely luka y chesnoka [Pests of onions and garlic]. *Nastoiashchyi khoziayn*. N 7 8. P. 56 60. [in Ukrainian].
- Tkalenko, A.N.* (2011) Vredytely luka [Pests of onions]. *Nastoiashchyi khoziayn*. N 7 8. P. 35 39. [in Ukrainian].
- Trybelia, S.O.* (2001) Metodyky vyprovuvannya i zastosuvannya pestytsydiv [Test methods and application of pesticides]. Kyiv: Svit. 448 p. [in Ukrainian].
- Tserkovnaia, V.S., Kobak, A.P.* (2016) Zashchyta luka repchatoho ot boleznei, vredytelei y sorniakov [Protection of onions from diseases, pests and weeds] lement tekhnolohyy vozdel vanyia selskokhoziaistvenn kh kultur v uslovyakh orosheniya: Sbornyk nauchn kh trudov Mezhdunarodnoi nauchno-praktycheskoi konferentsyy, Astrakhan. P. 196 200. [in Russian].
- Yarovyi, H.I.* (2006) Dovidnyk z pytan zakhystu ovochevykh i bashtannykh roslyn vid shkidnykiv, khvorob ta vegetables and melons from pests, diseases and weeds]. Kharkiv. 328 p. [in Ukrainian].