

## BEHAVIOUR OF INSECTS DURING HURRICANES IN MEDIUM LATITUDE

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### I. INTRODUCTION AND SURVEY OF LITERATURE

Although, fortunately, the effect of hurricanes in modifying light-trap catch cannot be monitored in Hungary, we had a possibility to do so on the basis of data released on the internet (Harper, 1998).

There are used light-traps for forecast of harmful insects in several states in the USA. The light-trap catch data can be found on the web. We examined the effect of hurricanes in modifying the behaviour of insects.

A report by Obermeyer and Foster (1995) is of equal interest, claiming that the consequences of hurricane Erin swirling in the bay area could be felt in the mid-west. Cornfields were contaminated by masses of the corn earworm moths brought there by the fronts arriving from the south east of the United States. Hurricane Bertha (July 12<sup>th</sup> 1996) perhaps helped to bring both velvetbean caterpillars (*Anticarsia gemmatilis* Hbn.) and soybean loopers (*Pseudoplusia includens* Walker) to North Carolina this year (Van Duyn, 1996). Harrison (2000) on the other hand, argues that in a hurricane, moths perish, having been swept out of the storm centre by the strong wind. A smaller than usual population will be observed for 7-10 days after the storm in the area affected by its passage.

### II. MATERIAL AND METHOD

For a description of the catch results of the light-trap operated in Lenoir, North Carolina indicated the time of the passage of hurricanes Bertha (July 13<sup>th</sup> 1996), Bonnie (August 27<sup>th</sup> 1998), Denis (September 5<sup>th</sup> 1999) and Floyd (September 16<sup>th</sup> 1999).

We had at our disposal the daily catch data of the following taxons: Lepidoptera: Sphingidae, *Heliothis zea* Boddie (Lepidoptera: Noctuidae), *Pseudaletia unipuncta* Haworth (Lepidoptera: Noctuidae), *Aclosternum hilare* Say (Hemiptera: Pentatomidae), *Euschistus servus* Say (Hemiptera: Pentatomidae), *Spodoptera frugiperda* Smith JE. (Lepidoptera: Noctuidae), *Heliothis virescens* F. (Lepidoptera: Noctuidae).

We added up by species the number of specimens caught on the nights preceding and following the hurricanes, the 3<sup>rd</sup> and 7<sup>th</sup> nights, that is, and then expressed the catch results of the individual days in the percentage of the total number of specimens. First we examined by species the effect of hurricanes on the catch. As we found no significant difference, we published the combined catch results of the species considered in percentage in the  $\pm 3$  day vicinity of hurricanes.

### III. RESULTS AND CONCLUSIONS

There were these values (Fig. 5) in the catch of insects: on the third preceding night = 23 %, on the second preceding night = 26 %, on the preceding night = 10 %, on the night of the hurricane = 0 %, on the following night 25 %, on the second following night = 8 % and on the third following night = 8 % were caught.

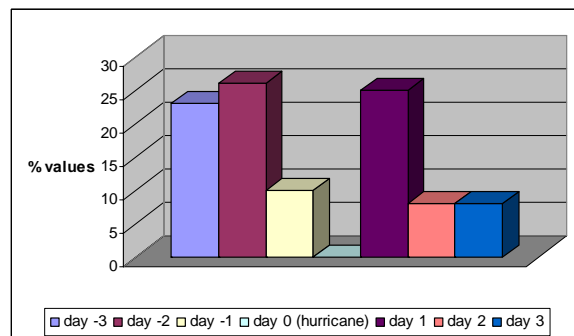


FIG. 1 Light-trap catch of insects around days of hurricanes

From the difference significant at a level of 95% on the night of the hurricane and the one preceding it we conclude that insects have a presentiment of the hurricane already the night before. Obviously, there is no catch during the passage of the hurricane, while the catch is high on the following night (significance level is 99.9). So instead of perishing, the insects survive the hurricane.

### IV. REFERENCES

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