



STUDIES ON THE RANGE HARMFUL TO RAPESEED CROP IN SEVERAL LOCALITIES IN BIHOR COUNTY

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Abstract: Rapeseed is a profitable crop. Besides the advantages, due to the yellow color of the inflorescence, it attracts a large number of insects, many of which are harmful and destroy the plant's organs. Through the present paper, we set out to see what is the range of species of harmful insects found in autumn in several localities in western Romania. The observations were made in the period 2020-2023, in autumn and spring. The results showed the presence of 17 species of different systematic orders, observed in all active and inactive stages (adults, eggs, larvae and/or pupae). The most frequent species were: *Phyllotreta nemorum*, *Phyllotreta atra*, *Meligethes aeneus*, *Athalia rosae*, *Myzus persicae*, *Ceutorhynchus assimilis*, *Ceutorhynchus napi*, *Autographa gamma*, *Plutella xylostella* and *Delia radicum*, with limits of 3-6 (20/aphid) individuals active, adults or larvae/m². Besides these, other species with a medium or low frequency (0.5-5 active individuals/m²) were also observed: *Helicoverpa armigera*, *Pieris brassicae*, *Mamestra brassicae*, *Eurydema ornata*, *Ceutorhynchus pallidactylus*, *Agriotes* spp. and *Dasineura brassicae*. In conclusion, rapeseed attracts many pests, many of them causing damage with significant production losses in the absence of effective monitoring and control strategies.

• Introduction

Rapeseed attracts a number of pests that differ as set in a crop at a given time. Previous research in the Western area of Romania shows a harmful range (GROZEA ET. AL, 2007; WHALEY, 2019). Both type, specific insects of rapeseed or non-specific polyphagous insects can be present (GROZEA 2006; WILLIAMS, 2010) and can produce significant losses (NILSSON, 1987; WILLIAMS and FREE, 1978) and which damages and is attracted to rape flowers. Through the observations in the present paper, we aimed to see and update the range of insect pests of rapeseed from several places in western Romania, (this being a favorable area for rapeseed cultivation) and focusing on those that are harmful to plants.

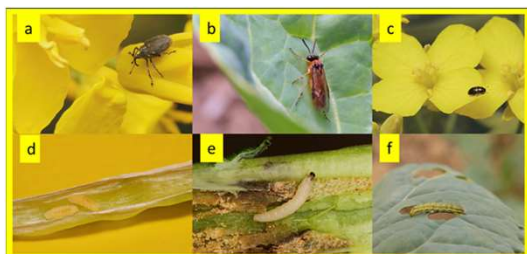
Material and method

The observations were made in a county in the western part of Romania and took into account all the pests found in rapeseed crops. The 13 cultures belonged to 13 localities located in the western wall of the county from south to north. The readings were done at various intervals, in the spring and autumn, over 4 years (2020-2023), sometimes the autumn readings were extended into the summer and also the autumn ones started earlier, in the summer. All crops were managed independently of the work's target, the observations being made on plots already sown.



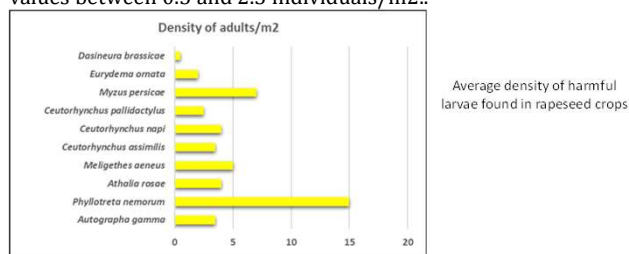
Results and discussions

The results show that in all 13 localities located along Bihor County from south to north (in the western part of the county), at least one of the 17 species was present (Figure). The behaviour of the active stages (adults and larvae) was different, in some cultures/places only the adults of certain species were observable and in others only the larvae

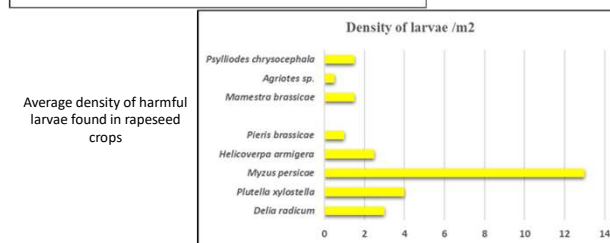


Pest insects observed in rapeseed crops in various stages

Average values of adults higher than 3 individuals/m² were recorded at species from genus *Phyllotreta*, *Meligethes*, *Athalia*, *Myzus*, *Ceutorhynchus* (n), *Autographa*, *Plutella* and *Delia*. With an average value of medium or low density, species of the genus *Ceutorhynchus* (p), *Eurydema* and *Dasineura* were found, with values between 0.5 and 2.5 individuals/m².



Average density of harmful larvae found in rapeseed crops



Regarding the density of larvae/m² (Figure) we found that those from genus *Delia*, *Plutella* and *Myzus* exceeded the level of 3 individuals/m², the others from the genus *Helicoverpa*, *Pieris*, *Agriotes* and *Psylliodes* had values between 0.5 and 2.5 larvae/m².

Conclusions

In rapeseed crops from the western part of Romania there is diversity demonstrated by the current study and also variations in density from one crop/place to another (which probably depend on the reserve in the soil, the preceding plant and other abiotic factors). Through the current study, we only wanted to draw attention to the range of existing pests and we would conclude conclusively that there are 4 species from the genera *Meligethes*, *Athalia*, *Ceutorhynchus* (p) and *Myzus* that predominate in all the places analysed. For continuity, probably another future study will try to assess the damage and find efficient management solutions.

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