

SEPTORIA PLANTAGINIS A CONSTANT PRESENCE ON PLANTAGO SP. IN SOUTHWESTERN PART OF ROMANIA

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Abstract: On the last two years, one of the targets of our research work from the area of Nera river basin was to determine the diseases of plantains (*Plantago sp.*) species from Nera river basin. Regarding to the work method, all observation data were collected during vegetation period of years 2017 and 2022. In this paper there are presented only averages of data collected during the time period mentioned previously. Our observations consist from three separate operations: first operation was to determine the areas with representative populations of *Plantago sp.*, second to determine the density of those populations and third operation was to see if those plants are affected of some pathogens and forth operation was to evaluate the attack parameters of each pathogen.

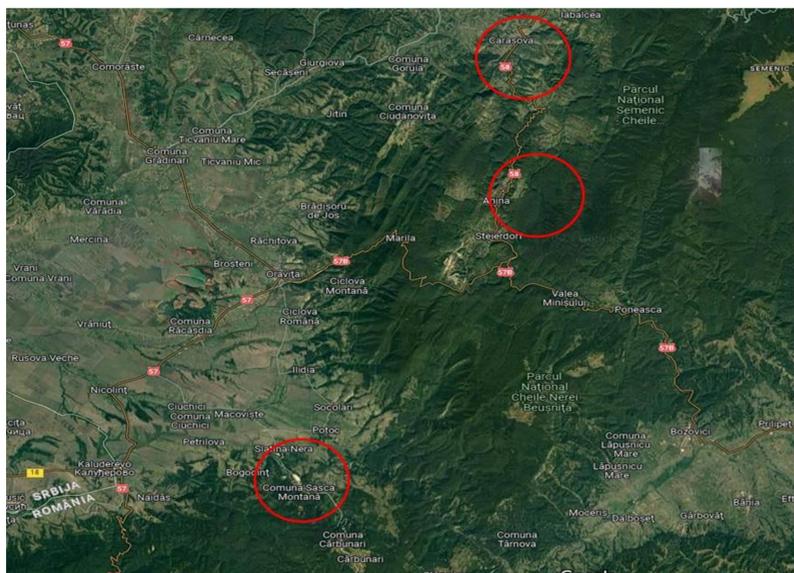
• Introduction

Plantago sp. is known in the world, including in Romania, as plants used for medicinal purposes (DAVID GH. BORCEAN A, IMBREA F., 2003). Plants conditioned in different forms are used in the treatment of various diseases of the skin, of the organs of the digestive system, of the circulatory system, for blood pressure and even wounds and inflammations (TURGUMBAYEVA A. ET. AL., 2022).

From literature it is well known that some of the fungi occurring on ribwort plants found in the United States include some pathogens with facultative character of parasitism as there are *Cercospora plantaginis*, *Septoria plantaginis* and *Phyllosticta plantaginis* (FARR ET AL. 1995).

• Material and method

The most present species of the genera *Plantago* are *Plantago major* and *Plantago lanceolata* and both species have large populations on the spontaneous flora on the southwestern part of Romania. The observations for present paper were carried out on three locations situated on the mountain region of the area and we define the population by the nearby location, as there are Population of Carașova, Population of Anina and Population of Sasca .



• Results and discussions

The degree of attack (table 5) stands out primarily by relatively low values, due practically to the low values of the frequency and intensity of the attack on the basis of which they were calculated. The data of the degree of attack resulting from the statistical calculation show that the differences between the three populations are very small, being below the significance limit.

Table 5

Factor A - populations	Factor B - year	Repetition 1	Repetition 2	Repetition 3	Average of factor A	Differences	Significance
Population of Sasca	2020	1,5	2,5	10,0	6,5	-0,1	-
	2021	3,0	5,0	11,3			
	2022	4,0	7,5	13,8			
Population of Anina	2020	3,0	2,0	11,3	7,4	0,9	-
	2021	2,5	4,0	17,5			
	2022	4,0	7,5	15,0			
Population of Carașova	2020	2,3	2,0	6,0	5,8	-0,8	-
	2021	5,0	5,0	8,8			
	2022	4,0	7,5	11,3			
Populations averages	2020	2,3	2,2	9,1	6,6	Control	-
	2021	3,5	4,7	12,5			
	2022	4,0	7,5	13,3			

Table 6

Fungus *Septoria plantaginis* attack degree between 2020-2022

Factor B - year	2020	2021	2022	Average
Averages	4,5	6,9	8,3	6,6
Differences	-2,1	0,3	1,7	Control
Significance	-	-	-	-

Also, the combination of attack frequency and attack intensity leads to a leveling of the two indicators values and shows that the attack of the pathogen is in reality easily absorbed by the plants' tolerance towards it.

• Conclusions

1. The number of plants infected during the three years in all three populations is around 30 %, which means that the plants of the *Plantago sp.* present in the field have a good natural level of tolerance
2. All the data and the results of the statistical analysis regarding attack intensity of the pathogen *Septoria plantaginis* indicate a good tolerance of the plants to the pathogen and therefore it is a limited loss of about 20% of the leaf blade during the entire vegetation period..