RELATIONS OF SIMULTANEOUS MANIFESTATION AT THE MAIN WHEAT MYCOSIS RELATED WITH THE PRODUCTION OBTAINED

RELAȚII DE MANIFESTARE SIMULTANĂ A PRINCIPALELOR MICOZE ALE GRÂULUI ÎN RAPORT CU PRODUCȚIA OBȚINUTĂ

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Abstract: *The research aimed the global interdependence of the action of more wheat pathogens (Fusarium spp., Septoria spp. and Blumeria graminis) and the production obtained both quantitative and qualitative. Its shows up the fact that the foliar diseases of wheat (mildew and septoriosis) determine the level of production on the quantitative level, and the diseases which affects the wheat, especially mildew, have more important influence in qualitative forming of the production.*

Rezumat: *Cercetările au fost efectuate sub prisma interdependenței globale a influenței mai multor patogeni ai grâului (Fusarium spp., Septoria spp. and Blumeria graminis) şi a producției cantitative şi calitative obținute. În urma cercetărilor efectuate, s-a constatat că bolile foliare ale grâului (făinarea şi septorioza) determină nivelul producției sub aspect cantitativ, iar dintre acele boli care afectează grâul făinarea este cea care are cea mai mare influență asupra formării calitative a producției.*

Key words: *wheat, mycosis, production, interdependence*
Cuvinte cheie: *grâu, micoze, producție, interdependențe*

INTRODUCTION

Function of stain, culture area, climatic year, and applied culture technology, the disease complex, which acts on the foliar apparatus of the wheat, produce harvest looses between 10 – 30% usually. The individual, endemic usually trait of the diseases produced by the *Fusarium spp*., *Septoria spp*. and *Blumeria graminis* fungi determines a constant decrease of the potential production of this very important culture. Because these diseases consuetudinary act during the vegetation period, we took into consideration the importance of the approaching the interrelations of simultaneous manifesting of wheat diseases in conditions of the Transylvanian Plane reported to the determined production, within the research area of the Phytopathology department.

MATERIALS AND METHOD

The research was performed in pedoclimatic conditions Turda, in Transylvanian forest steppe area, on a vertic clay-illuvial chernosem soil (with pH_{H2O} = 7.0; humus = 4.80% ; P – AL = 10.5 ppm ; K – AL = 102 ppm). The trials were placed, according to random under devised plots method for polyfactorial trials, in 21 variants (each variant under devised in three, for phytosanitary treatments), with four repetitions each.

The following factors were aimed:

- the **a** factor – soil fertilizing: 0; N_{60} P_{60} K_0 ; N_{120} P_{120} K_0
  N_{120} P_{120} K_0+Mo+Cu ;
  N_{60} P_{60} K_{60} ; N_{120} P_{120} K_{120}
  N_{120} P_{120} K_{120}+Mo+Cu
- the **b** factor – foliar fertilizing (with 2 treatments): 0; 1%Folifag; 6% urea
- the **c** factor – phytosanitary chemical treatment: 0; contact fungicide;
  systemic fungicide

The variants of fungicide treatments were the followings: untreated variant, one variant treated with contact fungicide (BRAVO 75 WP – 0.2% or 2Kg/ha) and one with systemic fungicide (TILT 250 EC-0.02% or 0.5 L/ha).

Within placed trail, soil and plant samples were periodically and at harvesting prelevated. They were analyzed in laboratory according to ICPA methodology, in order to perform agrochemical research and studies. The grain and straw production was recorded. Observations were performed on the attack degree of the *Fusarium spp*., *Septoria spp*. şi *Blumeria graminis*, fungi before the fungicide treatment and after two weeks from their application. The frequency, intensity and attack degree of the diseases were determined according to the classical methodology.

RESULTS AND DISCUSSION

The septoriosis and mildew have the same influence on the wheat production variation. The decrease of thye production was the same for both deseases, and productions over 4000kg/ha were only obtained in mildew and septoriosis low infection degree.

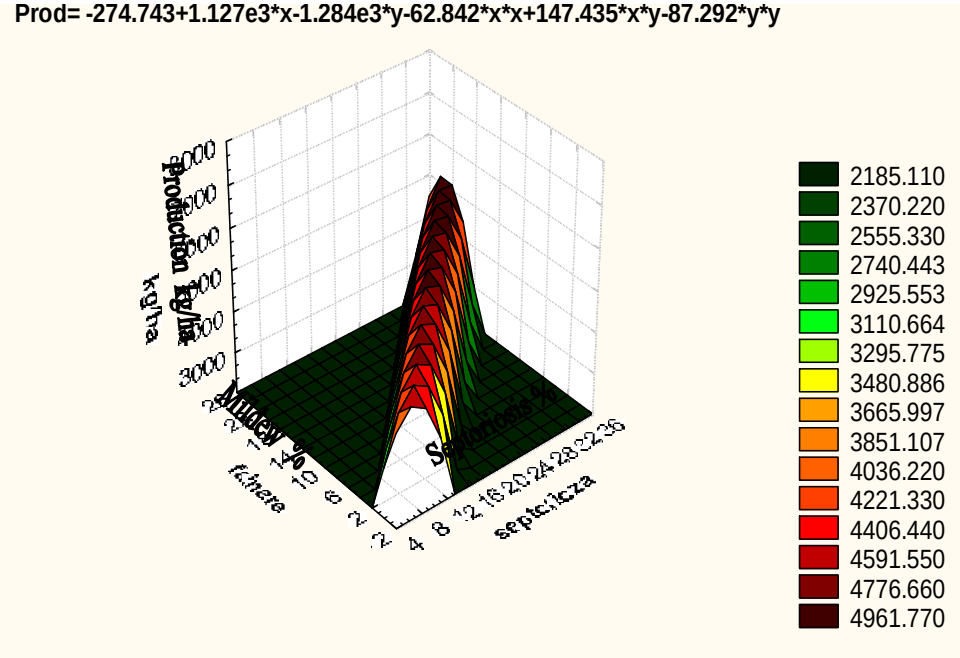

Figure 1. The answer area concerning the production variation function of septoriosis and mildew

Over 8 % mildew and 14 % septoriosis limit the weat production under 3000 kg/ha (figure 1). The variation of the production function of fusariosis and mildew is similar to the variation of production function of septoriosis and mildew, because the septoriosis and mildew are generally advantaged by the same environmental factors and same condition of the potassium presence in nutritional balance (figures 2 and 3).

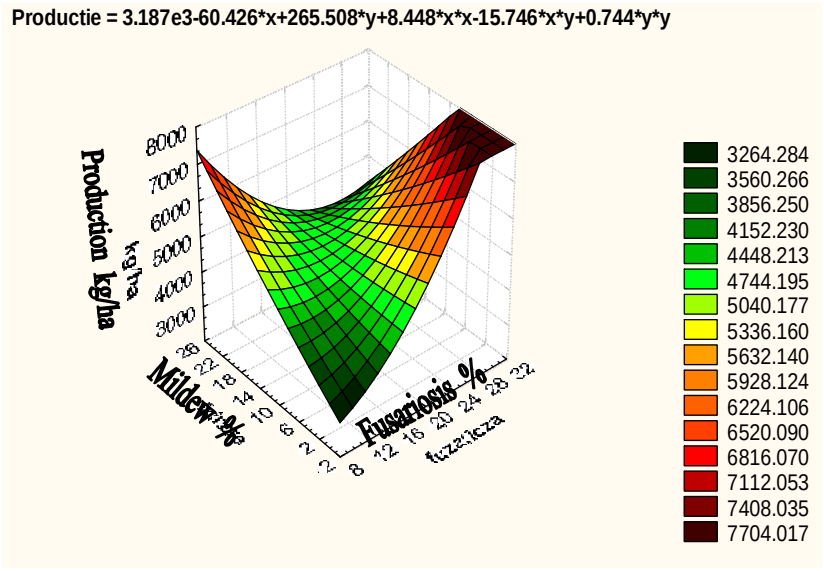

Figure 2. The answer area concerning the production variation function of septoriosis and mildew

The level of the wheat productions is 4000-5000 kg/ha in presence of both diseases (mildew x septoriosis or seprtoriosis x fusariosis) and may reach 7000 - 8000 kg/ha when septoriosis and mildew are under 8% and 2% respectively, attack degree, even fusatiosis is more frequent on grains (28-30%).

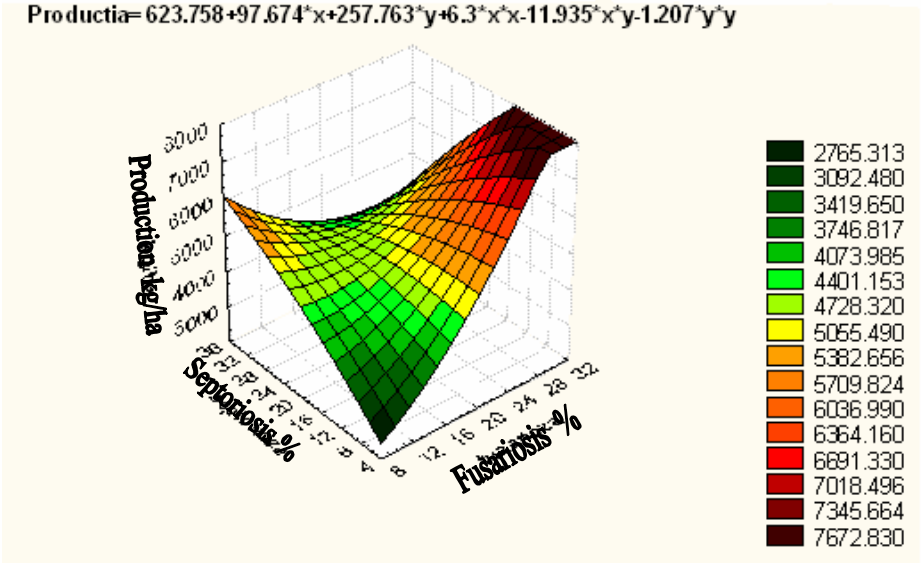

Figure 3. The answer area concerning the production variation function of septoriosis and mildew

CONCLUSIONS

The wheat foliar diseases (mildew and septoriosis) preponderantly influence the production level from the quantitative accumulation point of view.

Diseases which affect the ear components (fusariosis especially) seems not especially affecting the production content, but size and quality.

The interdependent interpretation of the attack of the plant pathogens reveals a synoptic perspective of the phenomenon with real practical connotations in development of the control strategy of the pathogens of culture plants and not only.

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