SOME ASPECTS OF CONTROL FOLIAR AND SPICE DISEASES OF WINTER WHEAT IN CONDITIONS OF BRĂILA PLAIN

UNELE ASPECTE PRIVIND COMBATEREA BOLILOR FOLIARE ŞI ALE SPICULUI LA GRÃUL DE TOAMNĂ ÎN CONDIȚIILE CÃMPIEI BRĂILEI

RÎŞNOVEANU Luxița[1], BURTEA Carmen[1], AXINTI Nicoleta[1]
e - mail: dnastase78@gmail.com

Abstract: *Wheat is one of the oldest cultivated plants and most important food plant, bread from wheat flour based food accounted for a large proportion of the world population. Wheat production, record special damages due to various infectious diseases, crop quantity and quality are strongly influenced by the number of pathogens that attack the system in different foliar stages of development and ear throughout its development. Fighting pathogens that cause infectious diseases of foliage and spice goes by chemical, biological, genetic and combining them with agrophytotechnical methods. Given the high degree of attack of pathogens in Câmpia Brăilei agricultural area during 2010-2012 were tested a number of substances to protect winter wheat, just to reduce this crop damage of economic importance.*
Key works: *Winter wheat, foliar diseases and ear, combating*

Rezumat: *Grâul este una din cele mai vechi plante de cultură şi cea mai importantă plantă alimentară, pâinea din făina de grâu constituind hrana de bază pentru o mare parte a populației globului.Producția grâului, înregistrează pagube deosebite datorită diferitelor boli infecțioase, cantitatea şi calitatea recoltelor sunt puternic influențate de numărul agenților patogeni care atacă atât sistemul foliar în diferite stadii de dezvoltare cât şi spicul pe tot parcursul dezvoltării acestuia. Lupta împotriva agenților patogeni care produc boli infecțiase ale foliajului şi spicului se duce prin metode chimice, biologice, genetice şi combinarea acestora cu metodele agrofitotehnice. Având în vedere gradul mare de atac al agenților patogeni în arealul agricol Câmpia Brăilei în perioada 2010-2011 au fost experimentate o serie de substanțe de protecție a grâului de toamnă, tocmai în vederea reducerii pagubelor produse acestei cultură de mare importantă economică.*
Cuvinte cheie: *grâu, combatere foliară şi spic, agenti patogeni*

INTRODUCTION

Crop yields and quality of cereals, particularly wheat, are strongly influenced by the number of pathogens of major importance, but also those of secondary importance. (Popov, 2007; Trotuş, 2007)

[1] University "Dunarea de Jos" of Galați, Romania

Fight against pathogens of wheat both foliage and the ear goes by chemical, biological, genetic and their combination with the methods agrophytotechnical being integrated fight against pathogens. Strategy for fighting pathogens of winter wheat is needed Understand the morphology, biology and ecology, as well as simpmalotologia disease. (Negulescu, 1984, Popov, 2005; Trotuş, 2006)

In this paper we present experimental results on the reduction of crop losses caused by some pathogens that affect foliage and winter wheat is grown by using chemical method.

MATERIAL AND METHOD

The research was conducted in Brăila Plain in 2010-2011. The experiments were located by randomized block method.

Winter wheat protection against pathogens *(Erysiphe graminis, Septoria tritici, Puccinia spp and Fusarium spp*) that cause foliar and ear diseases was performed by using the fungicides: Ardent 50SC (0.75 l ha), Mystic extra (0.5 l/ha) and Nativo (1.0 l/ha)

For foliar diseases were conducted two treatments and three ear diseases.

Observations and measurements were made from plant emergence to harvest experience. Based on measurements performed to calculate the degree of attack

Scientific data obtained were calculated and statistically analyzed using analysis of variance, the multiple comparison , regressions and correlations (statistical package SAS / SAT, PASW)

RESULTS AND DISCUSSIONS

Using fungicides to combat *Erysiphe (Blumeria) graminis* caused a significant decrease (R = 0,9643 ***) the degree of attack by 8,1% regardless of fungicide experienced. (fig. 1)

Fungicides Ardent 50SC, 300SC Nativo Mystic extra and caused decreases the attack of *Erysiphe (Blumeria) graminis* between 1.1-1.4% compared to the average attack experiment (2,5%)

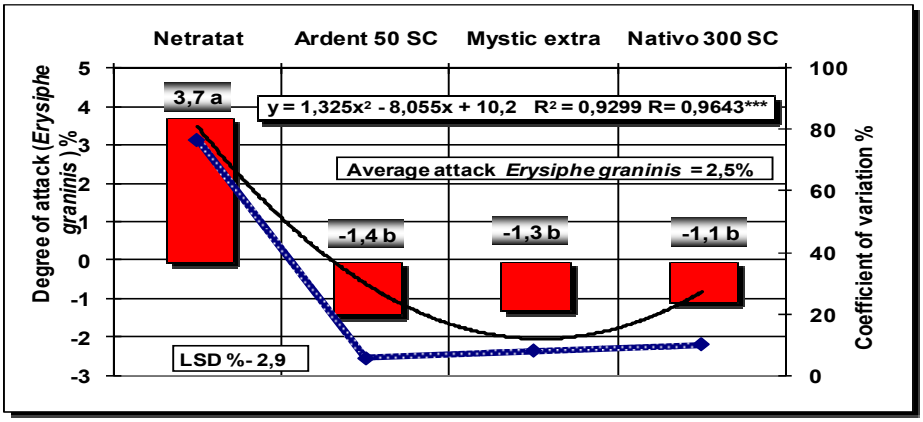

Fig. 1 - Influence of fungicides on the attack of *Erysiphe (Blumeria) graminis* on winter wheat foliage

All the protective substances being on the same level of significance. However, one can observe a slight tendency to level against this pathogen in the case of Ardent 50 SC.

In figure 2 it appears that in the case of attack by *Septoria tritici* the use of fungicides results in a decrease in the degree of attack greater than 96,6% (R = 0,9645 ***)

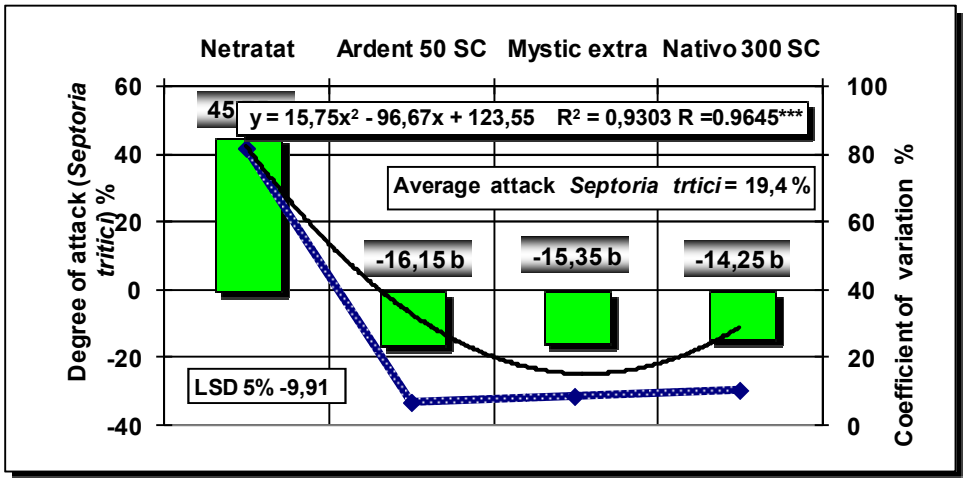

Fig. 2 - Influence of fungicides on *Septoria tritici* attack degree of the foliage in winter wheat

The three protective substances being placed at the same level scădări statistically significant between 14,2-16,1% from the average level of 19,4% attack experiment

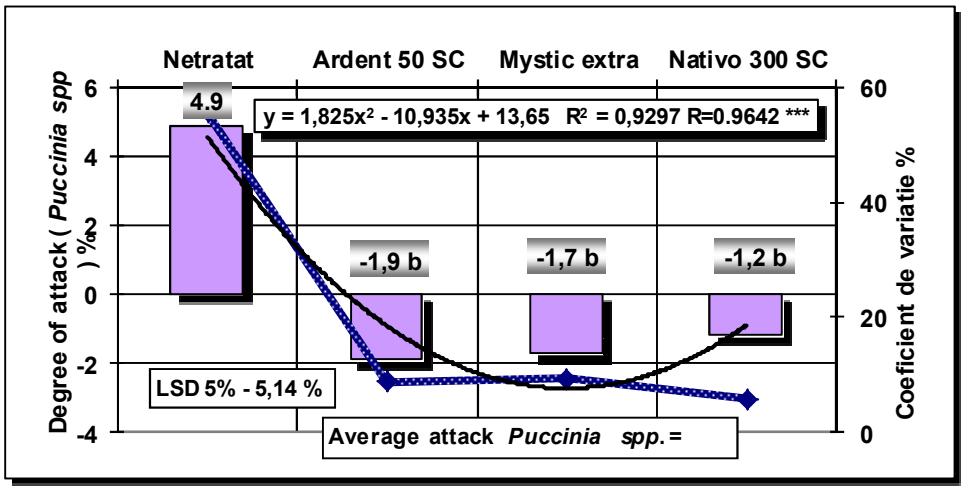

Fig.3 - Influence of fungicides on the attack of *Puccinia spp* on foliage in winter wheat

In regarding the degree of pathogen attack other study (*Puccinia spp*) (fig. 3) shows that the decrease, regardless of fungicide experienced was significant (R = 0.9642 ***) of 10.93% .

At the same time it appears that there are significant differences between protective substances used this situation to the same statistical level. Decrease the attack of the pathogen hovering between 1,2 to 1, 9% from the average level of attack of the experiment. There is however a slight decrease in the attack when Ardent 50 SC but insignificant.

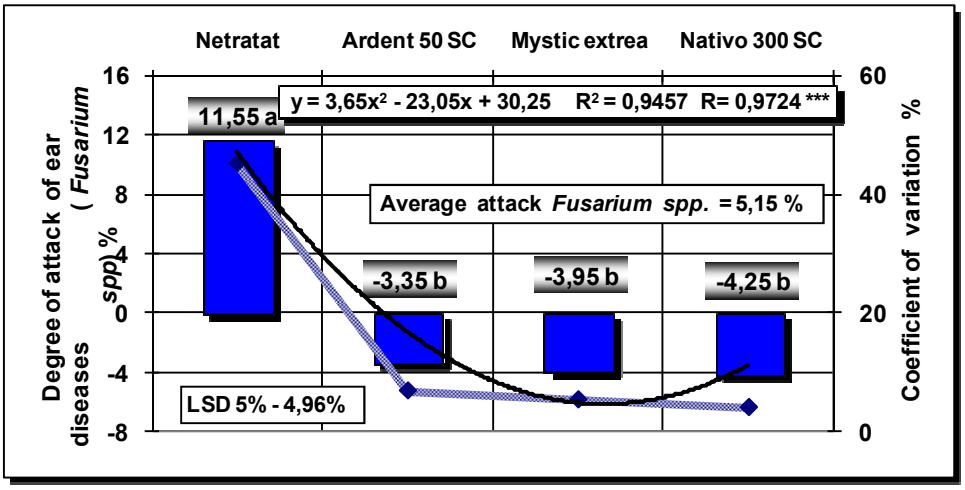

Fig.4 - Influence of fungicides on the attack of *Fusarium spp*. the ear in winter wheat

If the pathogen *Fusarium spp* (fig. 4) particularly affecting winter wheat is grown, it is found that applying fungicides studied the degree of attack decreased significantly (R = 0.9724 ***) with 23,05 % regardless of preservatives experiment.

Regarding the effect of each fungicide use is found that the decrease in attack ranged from 3,35 to 4,25%, compared with the average level of this pathogen attack (5,15%), being at the same level statistically there were no significant differences between them. We note, however, when his combat *Fusarium spp* (ear disease) that Nativo 300 SC has a slight tendency to overcoming the protective effect of other substances.

Figure 5 shows that the use of protective substances foliar disease control in winter wheat production increased significantly Câmpia Brăilei (R = 0.9509 ***) with 3,09 t / ha regardless of fungicide experienced.

The largest increase in foliar application during the growing season realizes Ardent 50 SC with an increase of 0,602 t / ha, compared to the average production experiment.

On the second level of meaning lies Nativo 300 SC Mystic extra and increases the yield of 0,437 t / ha and that 0,348 t / ha

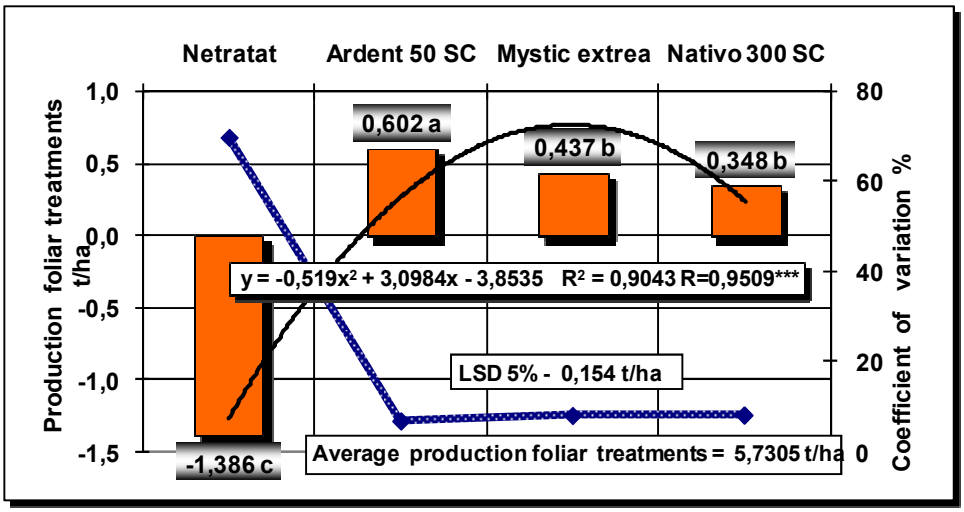

Fig.5 - Influence of foliar treatments on yield of winter wheat

In regard to disease control in winter wheat ear in figure 6 shows that applying fungicides significant production increases (R = 0,9463 ***) of 2,95 t / ha.

Increased production of winter wheat ear combating diseases are recorded by Ardent50 SC and Nativo 300 SC with an increase of harvest of 0,664 t / ha respectively 0,525 t / ha compared to the average treatment (5,928 t / ha) experiments , placing these fungicides first of significance

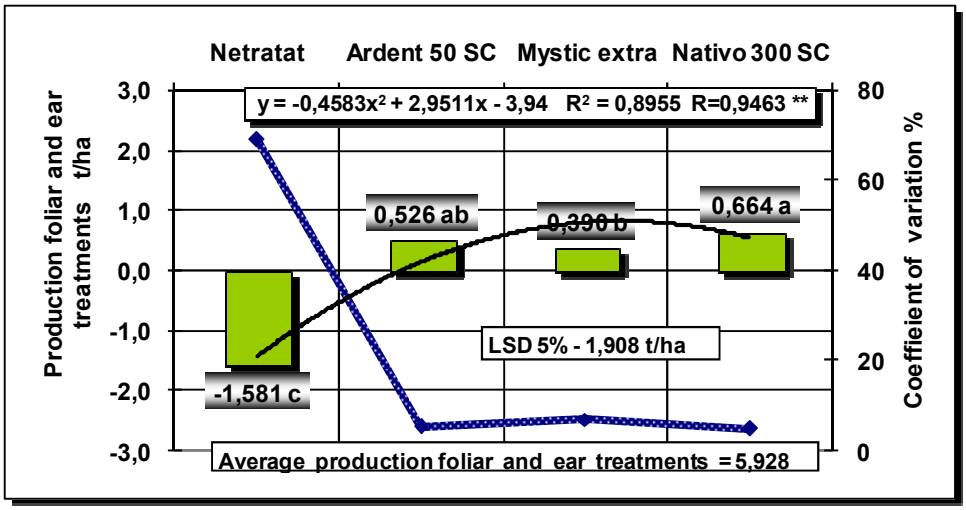

Fig. 6 - Influence of foliar and ear on winter wheat production

CONCLUSIONS

1.All protective substances tested in foliar disease control and ensured a good ear against specific pathogens of winter wheat.

2. By applying fungicides have been achieved significant production increase both in combating ear diseases of the foliage and throughout the experimental period.

3. Ardent 50 SC fungicide provided a better production when applied foliar treatments

4. The highest production values in the case of ear protection substances being made by Ardent Nativo 300 SC and 50 SC.

5. It is necessary to integrate chemical combat pathogens of winter wheat in the integrated control them.

REFERENCES

1. **Negulescu Floare, 1984** - *Bolile grâului.* In Grâul de Ceapoiu,N; Bîlteanu, Gh., Hera, Cr., Săulescu,N, N; Negulescu, Floare; Bărbulescu, Al. Ed .Academiei Republicii Socialiste România, Bucureşti
2. **Popov C**; **Spiridon Cristina; Rotărăscu Mihaela, 2005**- *Secvențe tehnologice recomandate pentru prevenirea şi combaterea bolilor şi dăunătorilor din culturile de cereal păioase*. Probleme de protecția plantelor, vol XXXIII, nr. 1, 2
3. **Popov.C., Bărbulescu Al., 2007-** *50 de ani de activitate ştiințifică în domeniul protecției culturilor de camp, împotriva bolilor şi dăunătorilor*. An. INCDA Fundulea , volum jubiliar LXXV
4. **Trotuş Elena, 2006**- *Rezultate experimentale obținute în protecția cerealelor păioase la SCDA Secueni,* Curierul Bayer Cropsciences nr. 1
5. **Trotuş Elena; Sirețeanu Carmen, 2007 –** *Date noi privind protecția culturilor de grâu împotriva agenților patogenişi a dăunătorilor apecifici*. Vol. omagial: 45 de ani de activitate ştiințifică. Ed.Ion Ionescu de la Brad, Iaşi.