ASPECTS POPULATION CONTROL *CEUTHORRYNCHUS QUADRIDENS* IN THE AGRICULTURAL IN AREA OF NORD EASTERN BĂRĂGAN

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Abstract

Extending culture of rape was accompanied by increased attacks by pests that are in full ascension. Reducing their production pests can reach 30-50%, and sometimes, in some years, it can be compromised by the total crop. Winter rape pests *Ceuthorryrinchus quadrides* in the agricultural area of Bărăganul de nord-est is proving to be the most damaging some years resulting in the destruction of the production of this crop of great economic importance. The period 2010 - 2011 surveys were conducted on population control this pest using plant protection products with different active substances to reduce attack by *Ceuthorrynchus quadridens* below economically damaging (PED) of winter rape

Key word : winter rape, frecquency , efficacy, insecticides, *Ceuthorrynchus quadridens*

In complex links technological culture of rape plant their fall protection is a decisive role in limiting the damage caused by pests, major disturbing factors in plant growth and development needs. [Popov, 2006 ; Rîşnoveanu, 2010]. Today is inconceivable obtain yields stable, safe and quality without taking into account the pest, insects, winter rapeseed crop specific. Winter rape is attacked by a large number of insect pests [Alford et al., 2003; Trotuş, 2007.2009]. Among them is a major pest Ceuthorrynchus quadridens large areas of winter rape growing, affecting culture in the range of stem elongation, flowering [Rîşnoveanu, 2004, 2010, Trotuş, 2009, Bărbulescu, 2001, Popov, 2004]. A very important strategy in combating this pest is the era of application of insecticides (growing phase) depending on the active substance of these, their mode of action [Trotuş, 2007]. This damage can affect over 50% rapeseed crops and in some years even leading to the compromise culture, therefore the application of insecticides with minimal effect on the environment constitutes an important link in achieving high yields, stable and quality of winter rape in the Bărăganul de nord-est. [Rîşnoveanu, 2010].

MATERIAL AND METHOD

Research has been conducted during 2009 - 2011 in agricultural area Bărăganul de nord-est

Experimental device: subdivided parcels

A. Periods of application of insecticides: stem elongation, bud united, scattered buds, blooming

B. Insecticides: Untreated, deltametrin 50g /l; esfenvalerat 5%; tiacloprid 240 g / l

Observations and measurements:

- Frequency harmful species % ; efficacy insecticides%

Interpretation of experimental results

- Analysis of variance, multiple comparison, - regression and correlation (statistical software package: MSTAT-C, PSAW, SAS / SAT)

RESULTS AND DISCUSSION

Population structure of winter rape pests in the agricultural area of Bărăganul de Nord-Est *(fig.1)* shows that *Ceuthorrynchus quadridens* accounts for 19.3%, being the second largest species harmful after *Melighetes aeneus* (24.6%).

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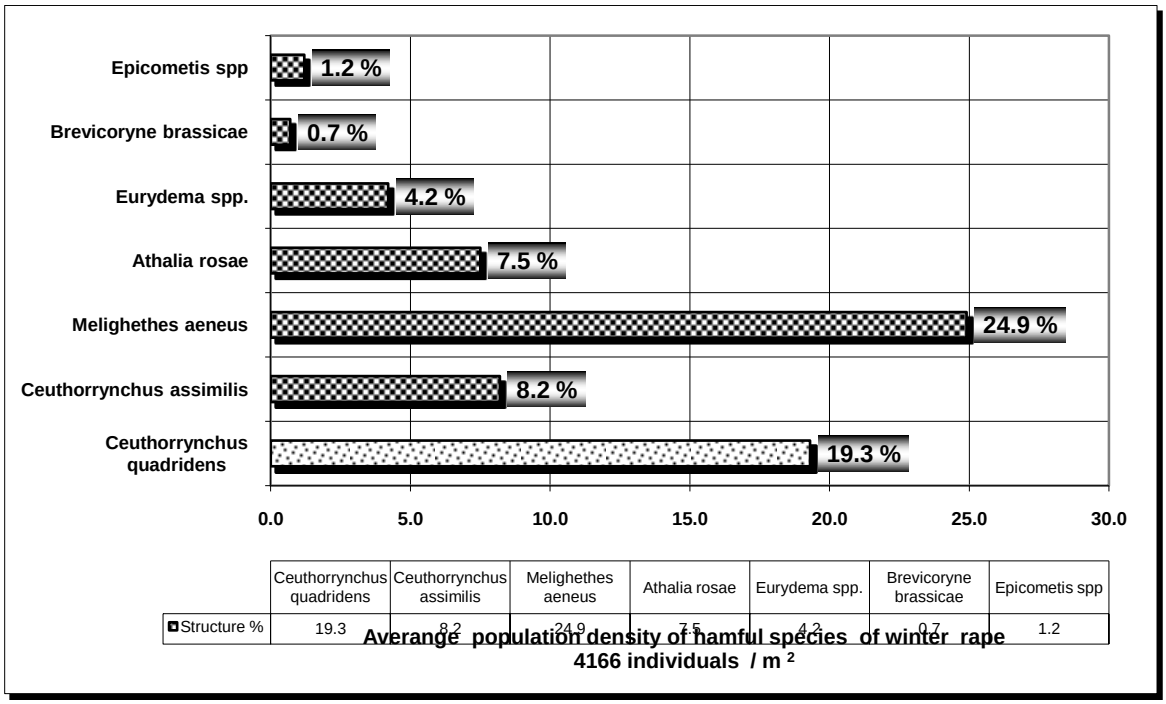

Figure 1 Structure of hamful species of spring winter rape in the Baraganul de Nord-Est 2008-2011

Of particular importance in combating this pest is particularly damaging period of application of protection substances, phase of vegetation (*fig. 3)*

Thus it is found, the more forward in growing winter rape from stem elongation to bloom, the attack frequency *Ceuthorrynchus quadridens* increase significantly (R = 0.9878 ***) by 12.6%.

The phase of vegetation affected rape winter buds are phase separated at a rate of 32,66%, located on the first level of significance, while it is found that during the flowering buds gathered and frequency of this harmful are at the same level of 32.01% and 31,17%

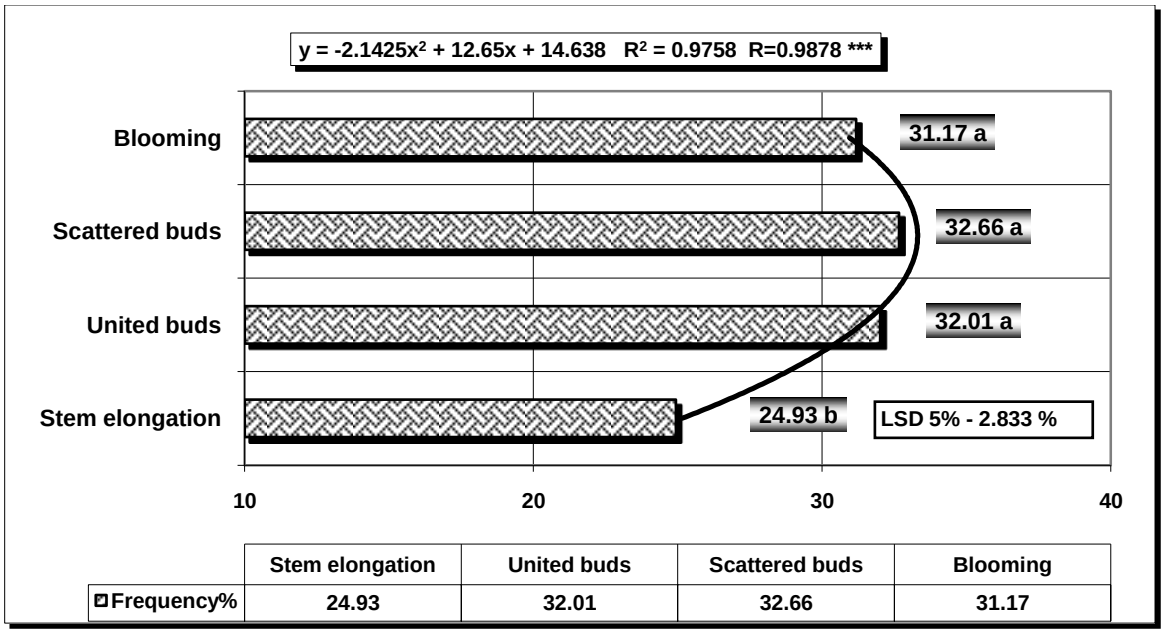

Figure 3. Influence of time of application of insecticides (stage vegetation) on the frequency of winter oilseed rape *Ceuthorrynchus quadridens*

Figure 4 shows that the efficacy insecticides applied increased significantly (R = 0.9938 ***) with rape as winter approaches flourished, 9.34%.

First the significance of efficacy protection substances register in stages separated shoots 78.9% and buds gathered 78.2%

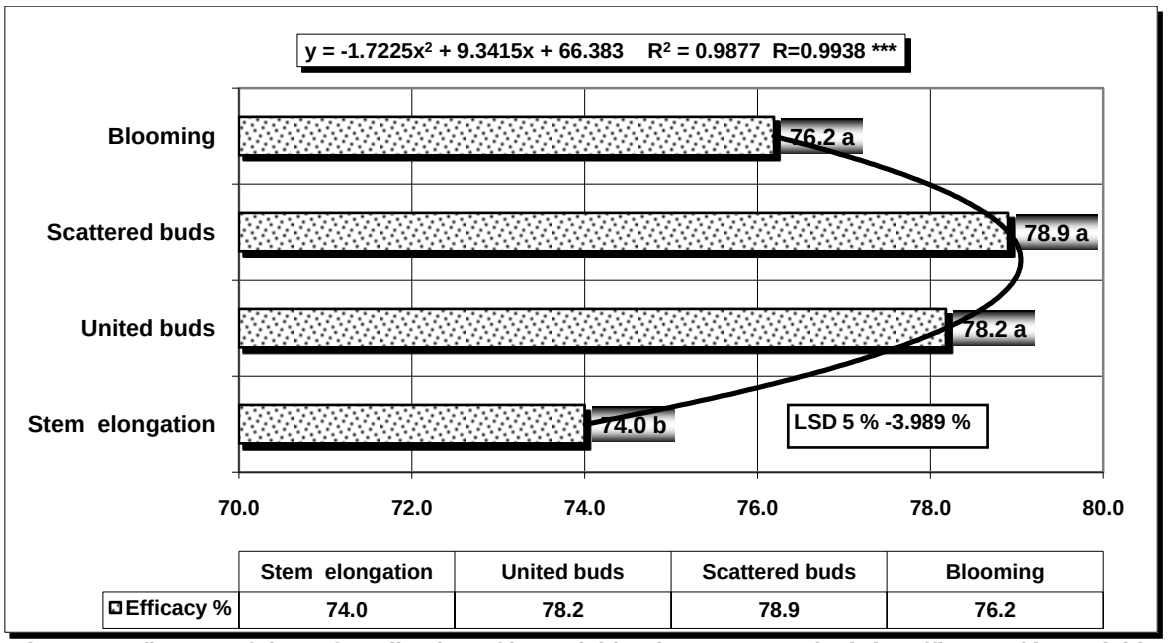

Figure 4. Influence of time of application of insecticides (stage vegetation) the efficacy of insecticides on *Ceuthorrynchus quadridens*

By applying protection substances *(fig5)* shows a significant decrease (R = 0.9989 ***) *Ceuthorrynchus quadridens* frequency with 77.66%. Tiacloprid 240 g / l, systemic, determines the lowest frequency of 9,4% of this pest being on the first level of significance. On the second level lies deltametrin 50 g / l, non-systeminc, with a frequency *Ceuthorrynchus quadridens* of 14.92%

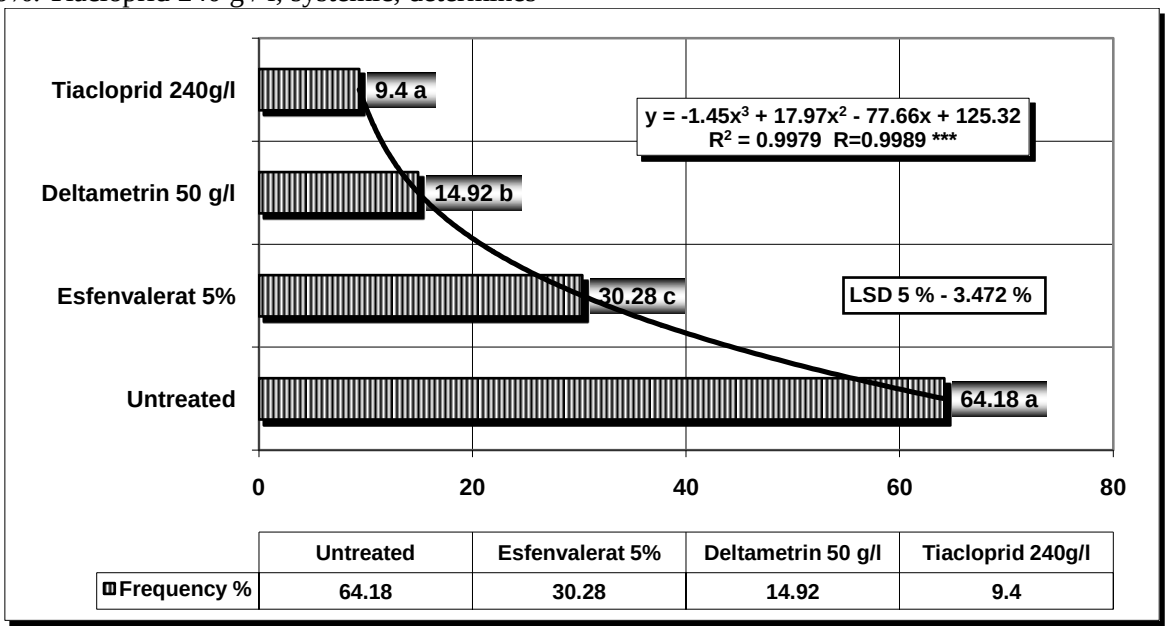

Figure 5. Influence of insecticides on the frequency *Ceuthorrynchus quadridens*

On regard efficacy insecticides applied (*fig. 6*) shows that, regardless of their active substance, there is a significant increase (R = 0.999 ***) to combat this pest of 89.68%.

The most efficient combat substance proves to be tiacloprid 240 g / l with an efficacy of 88.9%, placing them on the first level of significance. On the second level significance lies of non-systemic deltametrin 50g / l, with an efficiency of 81.2%

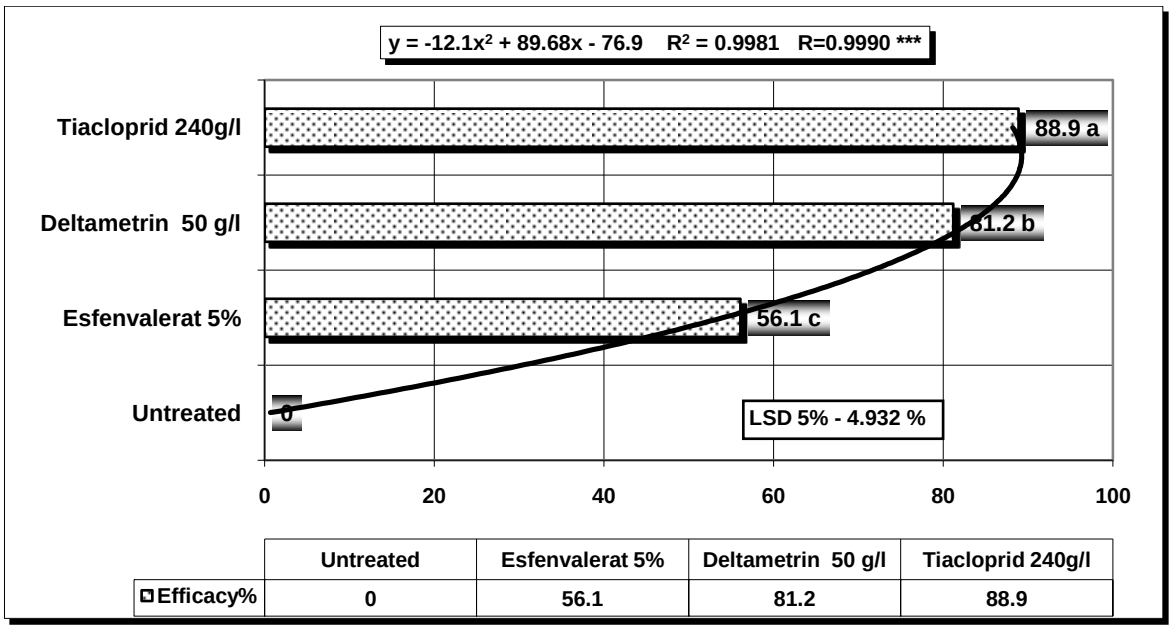

Figure 6. Efficacy insecticides on *Ceuthorrynchus quadridens*

In the application of insecticides on the influence of vegetation phases in order to determine the best formula to fight and the best times of their application shows that each stage of vegetation has a specificity regarding the protective effects of various substances applied on *Ceuthorrynchus quadridens.*

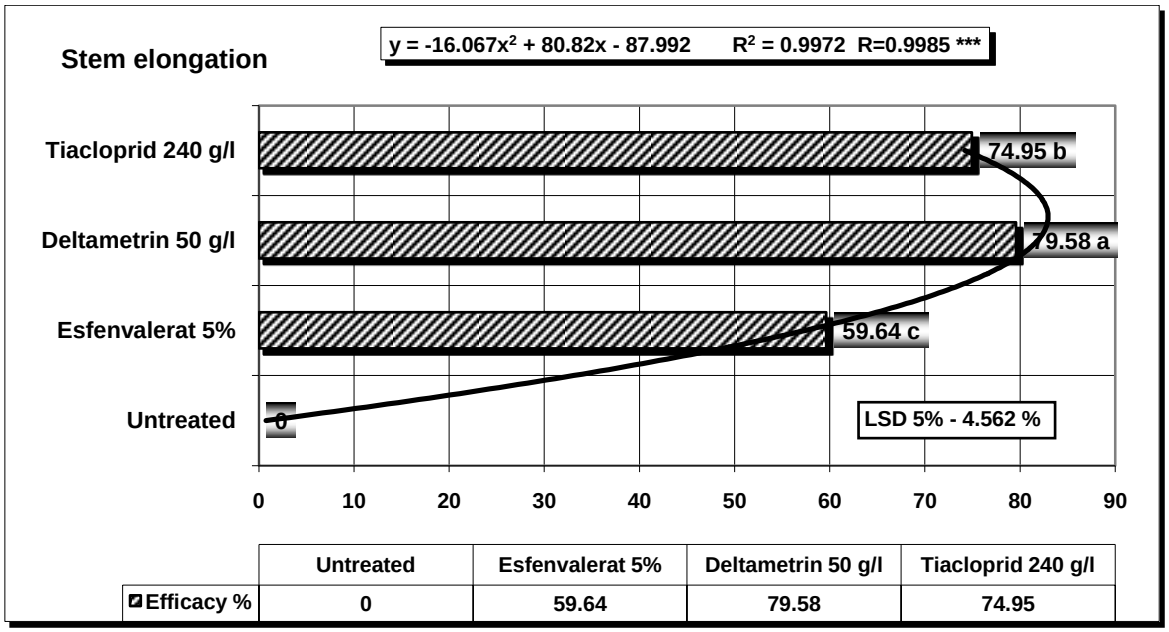

Figure 7. Efficacy of insecticides to combat *Ceuthorrynchus quadridens* phase of stem elongation (C) winter rapeseed

Regarding efficacy various protective substances *(fig 7)* shows that they provide significant control (R = 0.9985 ***) of 80.82% of *Ceuthorrynchus quadridens* during elongation of the stem.

Of these deltametrin 50 g / l, leads the non-systemic level of significance with effective control of vermin of 79.58%, tiacloprid 240 g / l, systemic being on the second level of significance in this phase of growth and development the winter rape.

In *figure 8*, is found in bud stage caused a united insecticides applied against the 87.1%

(R = 0.9957 ***) regardless of the active substance used.

The best effective in combating *Ceuthorrynchus quadridens* is provided by tiacloprid 240 g / l, systemic, with an efficiency of 82.9%

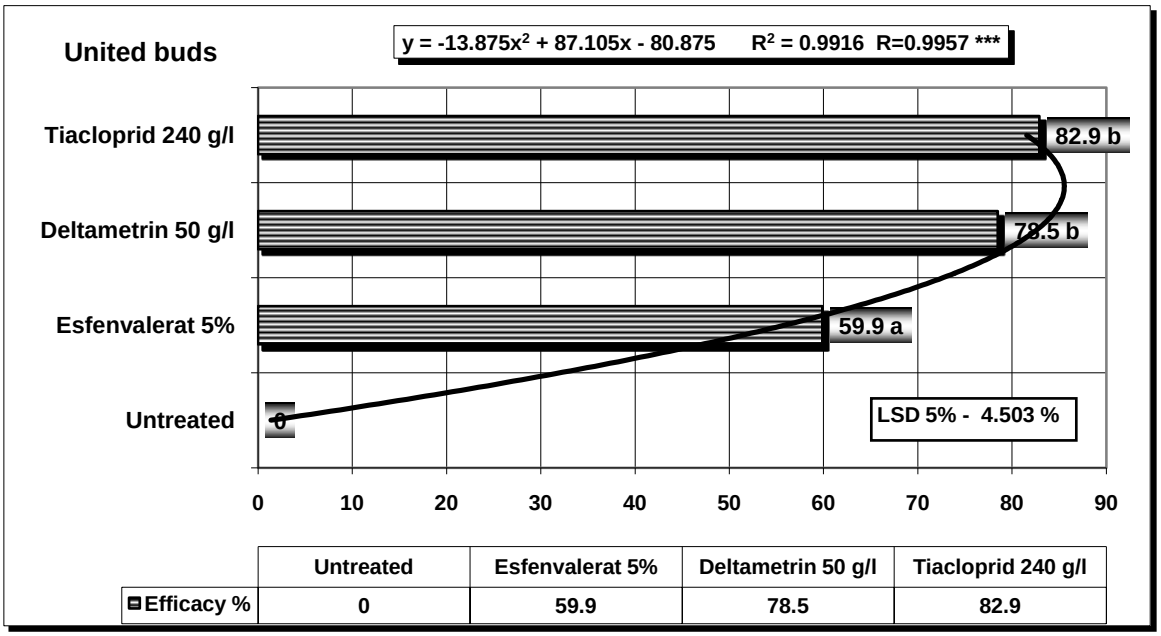

Figure 8. Efficacy of insecticides to combat *Ceuthorrynchus quadridens* united bud stage (D) of winter oilseed rape

Substances with the protection afforded fan shoots stage *(fig.9*) a control of 88.33%, the same level of significance as for pest control in the bud stage together.

Systemic insecticide tiacloprid 240g / l in ensuring this growth phase and the development of effectiveness in combating *Ceuthorrynchus quadridens* of 88.38%, being on the first level of significance.

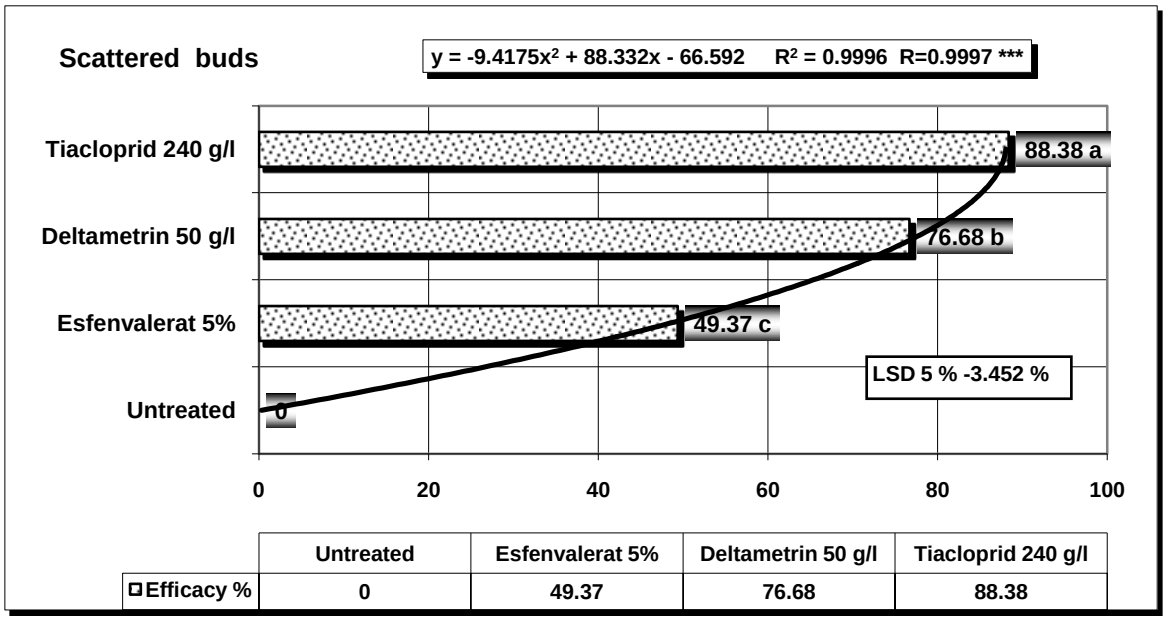

Figure 9. Efficacy of insecticides to combat *Ceuthorrynchus quadridens* separate bud stage (E) of winter rapeseed

At flowering *(fig.10)* the effectiveness of insecticides applied is 77.99% (R = 0.9996 ***) less than fan shoots stage 88.33%, their mode of action is essential at this stage growth and development of rape.

This systemic insecticide trialoprid 240g / l provides the best efficacy in pest control and 94.3%, being on the first level of significance. Instead nesistemicul deltamethrin 50 g / l has an efficiency of only 74.9%.

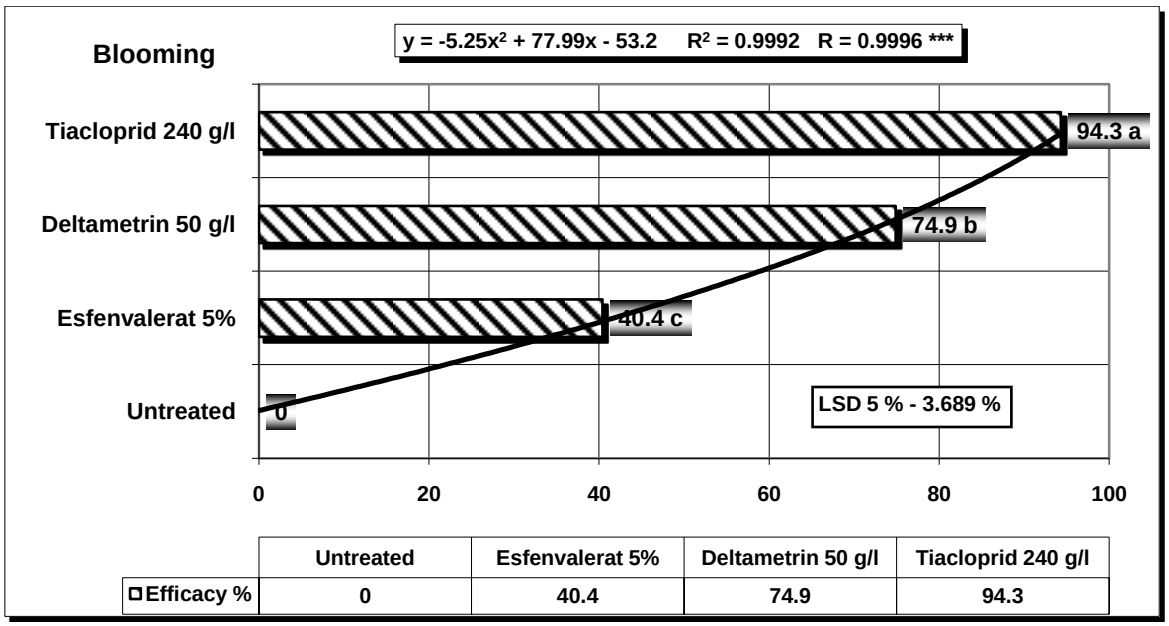

Figure 10. Efficacy of insecticides to combat *Ceuthorrynchus quadridens* in flower stage (F) of winter rapeseed

CONCLUSIONS

1. One of the most damaging pests of winter rape in area Bărăganul de Nord -Est *Ceuthorrynchus quadridens,* with a share of pest population structure of 19.3% over the period 2008-2011.

2. This harmful insecticides react differently depending on the stage of vegetation are applied substances protection.

3. In spring the stem elongation stage most effective in combating *Ceuthorrynchus quadridens* prove to be non-systemic insecticides deltamethrin based.

3 Bud stage so united non-systemic insecticides (deltamerin 50 g / l) and the systemic (tiacloprid 240 g / l) have the same level of control of this pest, with a slight upward trend in favor of systemic.

4 In other phases of vegetation winter rape blossom buds separate and systemic insecticides (tiacloprid 240 g / l) prove their superiority reaching an efficiency of 94.3% in bloom.

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