SUMMARY

During the period 2008 - 2010 by the observations made were clarified some important aspects of including rape pests affecting crops in the area of SE Transylvania, measures to prevent and control the necessary knowledge of useful of fauna rape crops and possibilities to protect it, etc.

Rape (*Brassica napus* ssp *oleifera* L) is a plant native to the Mediterranean, with a extensive use in the Middle Asia in Central and Nordic Europe countries because of oil from seeds, used both in food and for lighting.

The canadian specialists consider the current rapeseed oil by plant improvers invented genetically by conventional methods and to distinguish it from traditional rapeseed and were named canola (canadian oil law erucic acid).

The high content of oil seed rape, between 43 and 52% in cultivars of "00" and hybrids, and protein content of 21-24% among rape within oleoproteic plants. Therefore, rape enjoys special attention in the European Union, which recommends increasing the area occupied by this plant, but not at the expense of food crops.

Winter rape culture occupies large areas especially in areas with lower temperatures, where replaces sunflower (Poland, Germany, England, Scandinavian countries etc). In our country, though it has a long tradition of being cultivated as early decades of last century, this culture reveniment strong recorded in recent years, so far, at times exceeding the 100.000 ha area cultivated annually.

Rapeseed ranks fifth under the aspect production of edible oil from oilseeds. Rapeseed oil has wide industrial uses and food and cakes made from processing rapeseed have good forage value, being rich in protein (38-42%), carbohydrates and minerals. Rape stems used in building materials.

Rape is harvested early, is a good reason for grain and barley precedingthe autumn also is an excellent melliferous early plant (providing about 50 kg of honey/ha).

Following the progress made in the improvement, by obtaining varieties which reach 40% oil content and protein, degreased pressed, 40% and a reduced content erucic acid, rape became the a plant industrial-feed, an important food plant. Both because of its many industrial uses, but also numerous agronomic benefits, rape is considered a valuable crop, easy to set up and sold, but with some protection issues, especially caused by pests.

The purpose of research that have been made is to more precisely determine how pests which affect or may affect rape crops in the area of SE Transylvania, measures for preventing and controling the necessary knowledge of useful of fauna rape crops and possibilities to protect it.

Objectives are:

1. Knowledge of the current stage of research on harmful fauna in the rapeseed crop of SE Transylvania.

2. Knowledge of the current stage of research on the fauna of beetles useful rape crops in the area of SE Transylvania.

3. Identification of harmful of fauna rape crops.

4. Identification of useful species rape crops.

5. Comparative study of useful and harmful of fauna rape crops, depending on the technology applied.

In the research area, SE Transylvania, were separated into 3 stationary:

• Rupea in S.C. Rotbav,

• Fagaras area in S.C. Gusutri and

• Brasov area at the Institute for Potato

Collecting material in the research area was made periodically using two methods:

• method Barber traps soil type and

• beating method (shaking the plants).

In order to achieve research objectives were used in two variants:

• a variant number one (V1) rape culture, and seed treatments carried out at the during the period of vegetation;

• variant number two (V2), rape of volunteers increased from without and seed treatments during the growing season.

Observations on the structure, dynamics and abundance of species of beetles collected by the method Barber soil traps in stationary Rotbav

During the periods 2008 - 2009, Rotbav stationary, the variant treated, were collected 993 samples of beetles belonging to 62 species, 36 genres and 14 families.

Family with the largest number of samples was collected with 842 samples the family *Carabidae* (84.8%), followed by 71 samples of the family *Chrysomelidae* (7.2%), *Curculionidae* family with 24 samples (2.4%). Families *Elateridae, Cerambycidae, Cetoniidae, Scarabaeidae* and *Tenebrionidae* have been collected ont sample (0.5%).

The untreated variant were collected 560 samples of beetles belonging to 58 species, 39 genres and 16 families. Family with the largest number of samples was collected with 367 samples the family *Carabidae* (65.5%), followed by family *Chrysomelidae* 80 samples (14.3%), *Curculionidae* family with 43 samples (7.7%) and family *Nitidulidae*, 32 samples (5.7%). Families *Coccinellidae, Meloidae, Tenebrionidae, Mordellidae* and have been collected one sample (0.7%).

The harmful species strictly on rape crops, collected by the method Barber soil traps in stationary Rotbav

The variant treated were collected 89 samples, belonging to the following species: *Phyllotreta atra* Fabr. (44 samples), *Phyllotreta nemorum* L. (19 samples), *Meligethes aeneus* F. (9 samples), *Baris chlorizans* Germ. (8 samples), *Longitarsus tabidus* F. (3 samples), *Meligethes maurus* Strm., *Phyllotreta vittula* L. (2 samples), *Phyllotreta undulata* Kutsch. and *Psylliodes chrysocephala* L. (one sample).

The untreated variant were collected 110 samples belonging to the following species: *Phyllotreta atra* Fabr. (49 samples), *Meligethes aeneus* F. (27 samples), *Phyllotreta nemorum* L. (14 samples), *Longitarsus tabidus* F. (9 samples), *Meligethes maurus* Strm. (5 samples), *Phyllotreta vittula* L. (3 samples), *Psylliodes chrysocephala* L. (2 samples) and *Baris chlorizans* Germ. (one sample).

Observations on the structure, dynamics and abundance of species of beetles collected by the method traps soil Barber in stationary Institut

During the period 2008 - 2009, in stationary Institut, the variant treated, were collected 387 samples of beetles belonging to 41 species, 27 genres and 9 families.

The family with the largest number of samples collected was family *Carabidae* (237 samples), representing 61.2% of the total, followed by family *Chrysomelidae* (96 samples), representing 24.8% of total, family *Nitidulidae* (32 samples) representing 8.3%, the family *Curculionidae* (5 samples) representing 1.3% of the total. Other families have been between one and three samples collected, representing 2.1% of total.

The untreated variant were collected 280 samples of beetles belonging to 35 species, 25 genres and 9 families.

The family with the largest number of samples collected was family *Chrysomelidae* (146 samples) representing 52.1% of the total, followed by family *Carabidae* collected 92 samples,

representing 32.9% of the total, family *Nitidulidae* collected 23 samples, representing 8.2% of total, family *Staphylinidae* with 9 samples collected, representing 3.2% of total, families *Curculionidae* and *Dermestidae* with 3 samples collected, representing 1.1% of total and family *Elateridae* collected 2 samples, representing 0,7% of the total. Families *Mordellidae* and *Melyridae* have been collected one sample, representing 0.4% of total.

The harmful species strictly on rape crops, collected by soil traps Barber, in stationary Institut

In the variant treated were collected 124 samples, belonging to the following species: *Phyllotreta atra* Fabr. (63 samples), *Meligethes aeneus* F. (32 samples), *Phyllotreta nemorum* L. (25 samples), *Longitarsus tabidus* F. (3 samples), and *Baris chlorizans* Germ. (one sample).

The untreated variant, strictly harmful species of rape culture, were collected 168 samples, belonging to the following species: *Phyllotreta atra* Fabr., (91 samples), *Phyllotreta nemorum* L. (45 samples), *Meligethes aeneus* F., (23 samples), *Longitarsus tabidus* F. (4 samples), *Psylliodes chrysocephala* L. (3 samples), *Baris chlorizans* Germ. and *Phyllotreta vittula* L. (one sample).

Observations on the structure, dynamics and abundance of species of beetles collected by the method Barber soil traps in stationary Gusutri

During the period 2008 - 2010, in stationary Gusutri, the variant treated, were collected 109 samples of beetles belonging to 37 species, 25 genres and 11 families.

The family with the largest number of samples collected was: family *Chrysomelidae* 43 samples (39.5%), family *Nitidulidae* 24 samples (21.1%), family *Curculionidae* with 12 samples (11.1%), family *Coccinellidae* with 9 samples (8.3%). Other families have had smaller number of samples collected.

The untreated variant were collected 173 samples of beetles belonging to 38 species, 27 genres and 13 families. Family with the largest number of specimens collected was family *Nitidulidae* with 47 samples (27.2%), followed by family *Brachyperidae* 44 samples (25.4%), family *Chrysomelidae* 27 samples (15.6%), family *Elateridae* of 15 samples (8.7%), family *Curculionidae* 9 samples (5.2%). Families *Staphylinidae, Carabidae* and *Lathridiidae* have been one sample collected, representing 0.6% of total.

The harmful species strictly on rape crops, collected by Barber soil traps, in stationary Gusutri

The variant treated were collected 63 samples, belonging to the following species: *Meligethes aeneus* F. (21 samples), *Phyllotreta atra* Fabr. (24 samples), *Psylliodes chrysocephala* L. (4 samples), *Longitarsus tabidus* F. (4 samples), *Meligethes maurus* Strm. and *Meligethes exilis* Sturm. (one sample).

The untreated variant, were collected 72 samples, belonging to the following species: *Meligethes aeneus* F. (38 samples), *Psylliodes chrysocephala* L., *Meligethes tristis* Strm. (6 samples), *Longitarsus tabidus* F. (8 samples), *Phyllotreta nemorum* L. (7 samples), *Phyllotreta atra* Fabr. (3 samples), *Longitarsus atricillus* L. *Meligethes flavipes* Strm., *Meligethes picipes* Strm. and *Meligethes distinctus* Strm. (one sample).

Collecting material using the beating method (shaking plants) was performed in 3 stationary: Rotbav, Gusutri and Institut, using two variants (treated and untreated). Each sample was constituted by the sudden shaking of a plant, number of shots of 5 shots/plant. In laboratory insects have been classified into orders and families, and groups of harmful and useful arthropods.

In the stationary Rotbav, in 2008, the variant treated were collected 284 samples of insects belonging to 6 orders and 12 families, of which 264 samples belonging harmful of fauna (92.95%) and 20 samples belonging useful of fauna (7.05 %).

The untreated variant was collected 575 samples of insects belonging to 8 orders and 15 families, of which 539 samples belonging harmful of fauna (93.74%) and 36 samples belonging useful of fauna (6.36%).

In 2009, the variant treated were collected 16 samples of insects, of which 5 samples belonging harmful of fauna (31.25%) and a number of useful of fauna belonging to 11 samples (68.75%).

The untreated variant was collected a total of 25 samples of insects, of which 9 belong samples harmful of fauna (36.0%) and 16 samples belonging useful of fauna (64.0%).

In the stationary Institute, in 2008, the variant treated were collected 57 samples of insects, of which 55 samples belong harmful of fauna (96.49%) and two samples belonging useful of fauna (3.51%).

The untreated variant was collected 92 samples of insects, of which 73 samples belong harmful of fauna (79.35%) and 19 samples belonging useful of fauna (20.65%).

In 2009, the variant treated were collected 42 samples of insects, of which 12 samples belonging harmful of fauna (28.57%) and 30 samples belonging useful of fauna (71.43%).

The untreated variant was collected 31 samples of insects, of which 10 samples belong harmful of fauna (32.26%) and 21 samples belonging useful of fauna (67.74%).

Stationary Gusutri, in 2008, the variant treated were collected 45 samples belonging to 4 orders, 10 families, pest being in 93.33% and the percentage of useful as a percentage of 6.67%.

The untreated variant was collected 156 samples of insects, belonging to a number of 8 orders, 20 families and the percentage of useful species was collected 22.44% of the total of fauna.

In 2009, the variant treated were collected 193 samples of insects, of which 159 samples belonging harmful of fauna (82.38%) and 34 samples belonging useful of fauna (17.62%).

The untreated variant were collected in total 128 samples of insects, of which 85 samples belong harmful of fauna, representing 66.41% and 43 samples belong useful of fauna, representing 33.59% of the total of fauna collected.

In 2010, the variant treated were collected 122 samples, of which 78 samples belonging harmful of fauna (63.93%) and a number of useful of fauna belonging to 44 samples (36.07%).

The untreated variant were collected 231 samples of insects, of which 105 samples belong harmful of fauna (45.46%) and 126 samples belonging useful of fauna (54.44%).

Regarding the main pests of rapeseed crops and their useful entomofauna, during the observations, the three stationary: Rotbav, Gusutri, Institut and the situation is as follows:

In the stationary Rotbav the principal species pest in oilseed rape crops, in the variant treated chemically, in 2008, were collected 250 samples *Meligethes aeneus* F. In 2009 and 2010 was not collected any samples.

The untreated variant were collected 3 species: *Meligethes aeneus* F. (350 samples), *Phyllotreta atra* F. (116 samples) and *Phyllotreta nemorum* (33 samples). In 2009 the species was collected one sample of *Meligethes aeneus*.

Useful entomofauna main pest species in oilseed rape, in stationary Rotbav, at the variant treated was represented, in 2008, the family *Ichneumonidae* (6 samples), in 2009 the families *Coccinellidae* (2 samples), *Carabidae* (4 samples) and family *Formicidae* and *Staphylinidae* (one sample).

The untreated variant were collected families *Ichneumonidae* (6 samples) and *Aphidiidae* (15 samples); in 2009 entomofauna belongs to the family *Carabidae* (6 samples), *Formicidae* (7 samples), *Ichneumonidae* and *Coccinellidae* (one sample).

In the stationary Institut, in 2008, the main pest species in oilseed rape, in the variant treated chemically, were collected *Meligethes aeneus* F. (15 samples), *Phyllotreta atra* F. (2 samples) and *Ceuthorrhynchus assimilis* (one sample). In 2009 and 2010 were not collected any samples.

The untreated variant, in 2008, were collected 4 species: *Meligethes aeneus* F. (14 samples), *Phyllotreta atra* F. (4 samples), *Phyllotreta nemorum* (20 samples) and *Ceuthorrhynchus assimilis* (one sample). In 2009 the species was collected one sample of *Ceuthorrhynchus assimilis*.

The useful entomofauna main pest species, in the variant treated rapeseed crops, in 2008, belonged to the family *Aphidiidae* (2 samples) and *Formicidae* (one sample); in 2009 were collected seven specimens belonging to family *Formicidae*, 16 samples belonging to the family *Carabidae* and one sample belonging to the family *Coccinellidae*.

The variant untreated were collected 6 samples belonging to families *Ichneumonidae* and one samples *Braconidae* family; in 2009 were collected 10 samples belonging to the family *Carabidae* and 4 samples belonging to the family *Coccinellidae*.

In the stationary Gusutri principal pest species in oilseed rape crops were: in 2008, the variant treated chemically, species were collected: *Meligethes aeneus* F. (12 samples), *Phyllotreta atra* F. (6 samples) and *Ceuthorrhynchus assimilis* (one sample) . In 2009 were collected *Meligethes aeneus* F. (71 samples) and *Meligethes maurus* (43 samples). In 2010 were collected *Meligethes aeneus* F. (3 samples).

The untreated variant, in 2008, were collected 3 species: *Meligethes aeneus* F. (31 copies), *Phyllotreta atra* F. (22 samples) and *Ceuthorrhynchus assimilis* (3 samples). In 2009 were collected *Meligethes aeneus* F. (25 samples), *Phyllotreta atra* F. (one sample) and *Meligethes maurus* (24 samples). In the year 2010 were collected *Meligethes aeneus* F. of 14 samples.

The useful entomofauna main pest species, in oilseed rape crops, in the variant treated, in stationary Gusutri, in 2008, were collected a samples belonging to the families *Aphidiidae* and *Formicidae*; in 2009 were collected families *Carabidae* (12 samples), *Staphylinidae* and *Ichneumonidae* (one samples). In 2010, were collected species of families *Coccinellidae* (3 samples), *Formicidae* (2 samples), *Ichneumonidae*, *Pteromalidae* and *Latriidae* (one samples).

The untreated variant, were collected 7 samples belonging to family *Formicidae*. In 2009 were collected families *Carabidae* (23 samples), *Coccinellidae* (9 samples), *Staphylinidae* (3 samples), *Formicidae* (2 samples) and *Ichneumonidae* (one sample). In 2010, were collected families *Coccinellidae* (9 samples), *Formicidae* (12 samples), *Ichneumonidae* and *Carabidae* (2 samples).

Pest control was accomplished by using the seed treatment and during the vegetation. By the observations from the research period, **in stationary Rotbav,** were applied to the seed treatment (Picus 600 FS 6 l/t seed) and 2 treatments in the field in 2008, and 3 treatments in 2009 and 2010.

After chemical treatments, it follows that the main products applied to control pests in rape crops (Mospilan 20 SG at a dose of 0.125 l/ha) had a very good efficacy but low selectivity for useful entomofauna.

In the stationary Institut, during the observation were applied to the seed treatment (Picus 600 FS 6 l/t seed in 2008 and 2010, Cruiser OSR, 15 l/t seed in 2009) and 8 treatments in the field in 2008 and 2009, respectively 3 treatments in 2010.

After chemical treatments, it follows that the main products applied to control pests in rape crops (Calypso 480 SC at a dose of 0.1 l/ha and Nurelle D 50/500 at a dose of 0.4 l/ha), had very good efficiency and good selectivity for useful entomofauna both in terms of species abundance and families where they belong.

In the stationary Gusutri, were applied seed treatments (Cruiser OSR, 15 l/t seed and Nuprid OF 600 FS 6 l/t seed) and 5 treatments in the field in 2008 and 7 treatments in 2009 and 2010.

After chemical treatments, it follows that the main products applied to control pests in rape crops (Calypso 480 SC at a dose of 0.1 l/ha, Karate Zeon at a dose of 0.15 l/ha, Novadim Progress dose of 1,5 l/ha) had a very good efficiency and good selectivity for useful entomofauna both in terms of species abundance and families where they belong.