

# Rapeseed (*Brassica napus* var. *oleifera*)

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Rapeseed is a hardy plant from the family *Brassicaceae* (*Crucifereae*). Plant is easily recognized in June by intense yellow flowers that turn the landscape into pure poetry. Grown on large areas in many countries with moderate climate, grows particularly well in deep moist soils, especially if they are rich in humus. The plant has multiple values and it is mostly used for the production of edible oil and biodiesel fuel. Rape, along with sunflowers and olives are the main sources of vegetable oils for human consumption. Rapeseed is derived cross cabbage and rape more than 4000 years, and rapeseed may actually be considered a natural hybrid.



*Brassica napus* var. *Oleifera*

## **Ecological conditions of growing rapeseed**

Rapeseed search deep, moist but drained soil rich in humus and calcium, grows best on heavier loamy clay - soil, fails to light sandy soils, especially if they are poor in organic matter and humus. On longer flooded soils plants quickly destroyed, it better suit the soil slightly alkaline and neutral reaction (pH 6.6 to 7.6) but it is submitted and slightly acid soil (pH 4.5)



**Figure 1** – In the condition of deep and moist soils and mild climate, rapeseed gives high yields (3 to 4 tons per hectare). Treatment with herbagreen we can reach higher yields with less use of chemical plant protection products.

## **Methods of breeding**

Rape is sown in early autumn (September, October). It supports winter quite easily, even when the harsh winter, up to temperature - 20 C , but only if it is well rooted. For that industrial culture is very important to ensure good soil preparation, plowing to a depth of 50-60 cm, the optimal fertilization with animal manure and mineral fertilizers. It is a culture which is attacked by many diseases and also by a large number of pests. This culture should be also protected from weeds particularly in early stages of growth. Rapeseed harvest is done with use of adapted grain combine harvesters; harvest time is very important to choose the right time and this is the moment when the maximum number of pods became rape. The moment we recognize the dark brown pods on the lower part of stem and light brown in the middle part of the stem. Matured pods are easily dissolved, and thus may lose a large amount of seed if

harvest is done later. Rapeseed harvest is ordinary done mid-June. Average yields range from 2.5 to 3.5 tons per hectare of seed.



**Figure 2** - Rapeseed requires good soil preparation with deep plowing 50 to 60 cm, the optimum sowing period (September, October) and considerable fertilizing with manure.



**Figure 3** - The optimal environmental conditions and with proper agricultural technology plant is well developed and provides excellent results. This development is much more intensive and harmonious when herbicide is applied three to four times.

## **Economic importance of rapeseed**

Rapeseed is important because of very high quality oil production for human consumption (oil content in seeds can reach up to 45%), then as a byproduct of processing diesel oil. Byproducts of rapeseed oil are used in animal nutrition.

It is significant to note that the rape neliferna plant that attracts a large number of beekeepers with mobile beehives that there are considerable pasture for bees.



**Figure 4 -** On the surface of one hectare rapeseed offers numerous yellow flowers that are excellent grazing for domestic bees.

In addition, rapeseed can be used as green forage for livestock feed or silage. Sometimes rape is used for green fertilizer.



## **Result application herbagreena in the production of rapeseed**

On the farm of Stephen Kurecic (Moslavina) it was treated rapeseed area of 22 hectares in 2007 and on the property of Stanko Kralik in Valpovo ( 2009) on an area of 9 hectares, of which 0.5 ha is left for the control (without treatment with herbagreenom).



**Figure 5** - The picture shows part of area of the sown oilseed rape (22 ha), owner Stephen Kurecic. The whole area was 3 times treated with herbagreene which gave increased grain production (10%).



**Figure 6** - The picture shows a Stephen Kurecic in the crop rapeseed which is seen remarkable development of plants with large pods, solid and high-stemmed, resistant falling down.

On both properties, the treatment was performed 3 times in the early spring (first week of April, the last week of April and mid May). At both properties, soil has been prepared following fertilization with 50 tons of manure, 1400 kg NPK - 70:20:30 and then was made to 50cm deep plowing and sowing after that in early October.

### **Results and observations can be summarized as follows:**

On the Stephen Kurecic's farm was not possible to track the differences between the treated and untreated rapeseed as the owner did not want to leave untreated surface. However, rape very quickly began to develop after the first treatment. Plants were strong, with thick canopy and extremely resistant to attack by diseases and pests. Differences between rapeseed of Kurecic's and his neighbors were obvious. Dense set of rapeseed culture did not allow the development of weeds, flowering plants began earlier than in neighboring plots, green beans were firm and strong and long formed. Not fired, nor opened until they were completely dry, so the loss of seeds during ripening plants was reduced, and also in the time of harvest.



**Figure 7** - During the gradual maturing of pods and especially during the harvest lost a certain amount of seed due to spray of ripe pods; but with herbagreen treatment, yield loss is reduced because herbagreen pods seem stronger and more resistant to opening.



**Figure 8** – Folling down of rapeseed in phenophases of blooming is especially common when we exaggerate in fertilization with nitric fertilizers. We did observe that treated plants with herbagreen becomes strong and so resistant to folling down.

On the farm of Stanko Kralik we could somewhat follow the differences in growth, development, vitality and resilience of treated and untreated plants.

Treated rapeseed plants (on the surface of 8.5 ha), intensively developed and reached a height of 30cm higher than untreated plants (an area of 0.5 hectares). Treated plants a week earlier began to flourish, given the increasing number of larger and longer pods with 12% larger number of grains. On the entire treated area of 8.5 hectares are not observed any traces of falling down of plants while on the surface of untreated plants were laid down on 1 / 3 of the total area. It happened after heavy rain in the early flowering stage.

Unfortunately, it was not possible to monitor and determine the yield of rapeseed in grain and straw, but the owner estimated that the differences were at the level of 10 to 15%.

## **Conclusion**

Based on incomplete data and recorded observations that are obtained in these two examples of the practical treatment of rapeseed, we can say with certainty the following:

- Treated plants develop more consistent and more intense immediately after the first treatment by herbicide;
- Treated plants reach a greater height (20%), greater vitality and resistance to diseases and pests;
- Treated plants begin to flower 5 -10 days earlier than untreated;
- Treated plants ripen more evenly and give a firmer and thicker, longer beans that are difficult to open and thus reduce the losses of grain before the harvest and at the harvest;
- Treated plants provide about 10 to 15% higher grain yield.