

# Development of the culture of rapeseed *Brassica napus* L. in Argentina

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## Abstract

The culture of rapeseed is known in Argentina from year 1940. In year 1974 began the first works of investigation. In year 1990 is reached the greater surface of production. The seeded surface decayed because of the existence of problems in the commercialization and industrialization. In the last three years the seeded surface is over the 10,000 hectares. At this moment the main producing zone is located in the center and the south of the Province of Buenos Aires and are being developed new areas with promissory results. Actually, the Instituto Nacional de Tecnología agropecuaria (INTA) is developing projects referred to the improvement and the crop management. The incorporation of rapeseed in the Argentine schemes of production displays numerous advantages for the producer as for the oil industry. Fundamentally, because is a winter oleaginous culture and the base of the oil production in the country is given for summer crops. This contributes to the diversification and allows the farmers to accede the market at another time of the year being diversified the production and dispersing economics risks.

The yields reached are similar to the obtained by the main producing countries and the quality of the oil is according to which is required for the world-wide markets. There are technological constrains, and a lot of works are making with the purpose of making the necessary adjustments to allow a maintained growth of the seeded surface and the production. It is necessary in addition, to transfer all the information with which one counts making activities of diffusion and training to complement and to accompany the commercial proposal. The culture will grow in surface due to the necessity of the farmers to diversify their production and to improve their profit. Considering that Argentina is one of the main exporting vegetal oil countries and rapeseed is the second oleaginous culture in importance, it will be excellent that the country begins to participate in this market.

**Key words:** Production, seeded surface, diversification

## Introduction

In the decade of the 40, the Argentine oil industry elaborated Argentine nabo oil (*Brassica napus*). It is as of that moment that the culture begins to be known in the country. In 1964 the production of nabo was decaying. Paralleling Canada began with improvement works from Brassicas of Argentina and Poland.

In 70 years, began the great world-wide demand and in Argentine began the investigations made by the Instituto Nacional de Tecnología Agropecuaria (INTA) and the universities.

At the beginning of the decade of the 90 the National state and private enterprises begins a stage of diffusion. At this moment, the seeded surface reached 51,000 hectares.

In this stage the technological development of the culture allows to assure the potentiality of its production. Nevertheless factors related to the commercialization and industrialization delay the continuous growth.

In the last years the different components of the productive and commercial chain continue with the works in the crop.

At the moment, the Instituto Nacional de Tecnología Agropecuaria (INTA) is working in national projects oriented to the improvement and crop management in different ecological regions. It has been created a cultivars network of evaluation that cover different productive regions with different characteristics as far as climate and ground. The farmers have incorporated rapeseed in their sequences of rotation seeing in this crop the possibility of diversifying their production. Four enterprises of seeds make the introduction of cultivars of the main producing countries with the purpose of extending the varieties offer. In the commercial face there are new buyers that make the processing of the grain to supply the different demands, this allows that the market improves.

## Importance in the Argentine production system

The incorporation of rapeseed in the production systems of the country displays numerous advantages for the farmer and the industry:

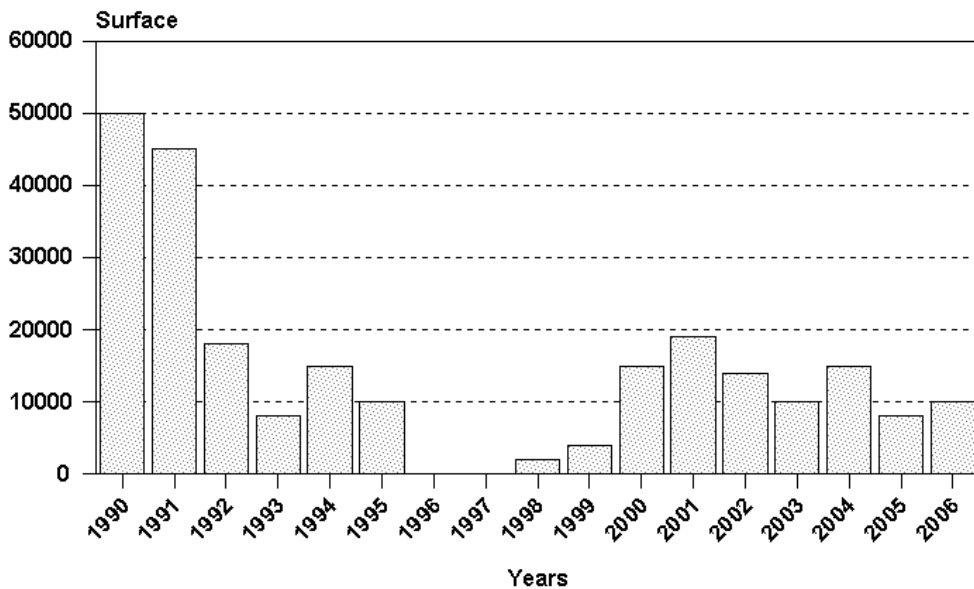
- Unlike most of the oily cultures that take place at summer time, rapeseed by its cycle accedes to the market at another moment of the year it increased the supplying to the industry and not superposing itself with the other oily ones.
- In the zones that are a restricted rotation to winter cereals, rapeseed offers to the farmer the possibility of incorporating a crop that contributes to the diversification improving the control of weeds and the presence of diseases.
- It improves the structure of the ground and the management of the water in the profile due to the effect of the root of rapeseed.
- in relation with cereals the cost for the treatment of weeds problems is lower.
- It allows a more efficient use of the machinery, since seedtime and the harvest is made in different moments from

cereals.

- In no - till sowing rapeseed allows the accomplishment of another crop like soybean in one more a earlier date than the wheat or the barley.
- It contributes to disperse economic risks and allows to have income before cereals.
- Argentina can participate in the international market of rapeseed with volumes of production in against station with the North hemisphere where the main producers of this oily one are.
- To the industry it allows the production of high quality oil that is demanded by the most important markets. In addition, the factories are occupied in a moment that they are useless. The base of the oil industry Argentine this given by soybean and sunflower.
- the biodiesel interest in all the world is increasing, it will allow the country to position itself like a world-wide important rapeseed oil producer with the possibilities of supplying to the countries with this type of energy.

**Actual situation**

In the last three years the surface dedicated to the crop has become stabilized in values near the 10.000 hectares (graphic 1).



The main producing zone is located in the Southeast and southwest of the Province of Buenos Aires and the east of La Pampa. These zones agree with the main wheat area of the country. In addition, they are next to one of the ports of the country where it operates great part of the oil industry that receives the production of rapeseed. Other regions located in the north of the province of Buenos Aires and Entre Rios are being gotten up.

1600 kilograms per hectare is the yield average that is reached, and is similar to which is obtained in the main producing countries.

The data given by the main exporting company of rapeseed show that the oil is of excellent quality.

Percentage of oil	49.6 %
Erucic acid	0.2 %
Glucosinolates	10.2 ppm
Green grain	0.21 %
Oil colour	normal

It is counted on information with regard to basic technology of sowing, control of weeds, phosphorous and nitrogen fertilization, opportunity and systems of harvest. It is had productive information and sanitary referred to the commercial cultivars.

**Technological constrains**

in the present context there are difficulties and limitations of technological order.

In the last year it was made different surveys and samplings of a surface of 7,400 hectares, the average yield obtained was 1,484 kilograms per hectare the maximum value was 2,680 kilograms per hectare and the minimum 220 kilograms per hectare. The 55.2 % of the surface surpassed the yield average in 26 % that was over 1,800 kilograms per hectare. The agronomic disadvantages that appeared are shown in the following picture:

These data show that in more of 50 % of the cases the technological problems are concentrated in the stage of implantation crop, following this in importance appear nutrition, health and at last the climatic adversities.

	%
Implantation, frosts, hydric stress	25.5
Residuality of herbicides	21.2
Quality of sowing	14.8
Diseases and plagues	14.8
Quality of the plot	12.7
Fertilization	6.3
Climatic adversities	4.2

The results obtained in this work show that is necessary to fit and to improve the technology available.

In addition, is due to transfer all the information which it is counted through diffusion activities and training the farmers this will allow complementing the commercial proposals.

### Conclusions

Argentina presents competitive advantages such as: climatic and soils conditions that allow the production of rapeseed. The quality of oil is excellent and is able to supply to the most demanding markets. The oil industry is perfectly developed and can process this oily without competing with the productions of sunflower and soybean.

The perspective is that the crop will grow, in surface and production due to the preference of the farmers that finds in rapeseed an excellent option to diversify the production and to improve yields and because of the investigation and experimentation works that are made to correct the technological constrains that even appear.

Argentina is one of the main countries that export vegetal oil and rapeseed is the second oily one in importance, it would be very important that the country begins to participate in this market.

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