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TECHNICAL CONCEPTION OF FARMERS TO ECONOMIC POSSIBILITY OF EXPANDING OILSEED RAPE CULTIVATION IN NORTH-EAST OF IRAN

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Abstract

Winter rapeseed is relatively new introduced crop that is in competition with winter cereals especially irrigated wheat in North-east of Iran. Farmers must to decide which of them is more economic and profitable for cultivation. Local farmers have a good technical cognition about wheat cultivation historically, so this crop has more chance for selecting in their cropping system compared to rapeseed. Besides, lack of technical recognition about rapeseed cultivation and management is led to lower seed yield compared to wheat. This research was conducted for determining the competitiveness capability of rapeseed and its some technical and economical aspects in that region. Results showed, almost the half of statistical community of farmers were satisfied for rapeseed cultivation. They were who had been achieved more than 1800 Kg.ha^{-1} , seed yield. For increasing rapeseed economic yield in farmer's fields, it needs to promote their technical knowledge about crop management too. Relative to this fact, 66.7% of farmers believed, rapeseed in cropping system could be reduce weeds and increase the yield of subsequent crop. 70% of farmers believed that oilseed rape- cereals rotation can increase the wheat seed yield after rapeseed. Eless of these beliefs, still 48% of farmers has a weak conception to expanding oilseed rape cultivation areas.

Key words**:** *rapeseed-wheat rotation, cropping priority, farmer's viewpoint, farmer's interest, profitable crop*

INTRODUCTION

Iran is spending a large amount of foreign exchange for import of edible oil, because more than 90% of country's edible oil is imported. For solving this problem , the government of Iran has focused on new and high potential oilseed crops.

Rapeseed is almost new oilseed crop that has entered to Iran's cropping system about two decades. In north-east of Iran one of the greatest worries of farmers is economic competitiveness and selecting between rapeseed and cereals for winter cultivation (Azizi and Moayedi, 2012) [1].

Sedighi (2002) has confirmed on the positive relationship between farmer's technical knowledge and their viewpoint to planting rapeseed. [5].

Yazdani (2007) based on a questionnaire survey, concluded that about 50 percent of his sampling population had no interest to cultivation of rapeseed for the second time. [7]. These group were who had not enough cognition against the crop and its agronomic management.

Economic yield of rapeseed in north-east of Iran must be increased gradually until it be economically profitable compared to wheat (Azizi and Moayedi, 2012) [1].

Technology transfer, training and agricultural extension education are key factors for adopting a new crop in a new region.

These empower and help farmers to better decision (Blackburn and Flaherty,1994; Rogers,1995; Tiraieyari et al.,2010) [2, 3, 6].

The average rapeseed yield in Iran is comparatively low, and there is a gap between the potential and realized yield representing the potential of technology and training for improving the economic yield and farmer's interests.

This paper concludes the competitiveness capability of oilseed rape and its some technical and economical aspects in north-east of Iran.

MATERIALS AND METHODS

Quchan area in north-east of Iran was considered to perform this experiment. Farms underlying this research were distributed in a area about 3,500 hectare. The method of study was "survey research" with 300 rapeseed farmers sampling community. This research was done on 2009-2010. We used questionnaire for collecting data. The questionnaire was included questions about agro-technical factors, satisfaction, costs and incomes, and governmental support from rapeseed farmers.
Common biometric methods was applied for data analysis., such as, determination of relative frequency, cumulative frequency distribution, Pearson's normal distribution and correlation analysis(Sanders, 1990).

RESULTS AND DISCUSSIONS

Farmer's viewpoint about the effect of existing rapeseed in their crop rotation as a preceding crop before wheat has shown in table 1. Table consists of some agro-technical variables that are important in agricultural management. Based on farmers standpoints yield increasing of subsequent crop specially wheat in this case, and weed cleaning the field after rapeseed, are two advantages of planting this crop in rotation. Unpublished data also showed the water consumption per hectare of rapeseed fields was less than same area as wheat crop, 53% farmers believed.

Table 1. Effect of entering rapeseed to crop rotation of the region.

Variables	Frequency	Percent	Cumulative percent	P-Value	t
Yield of subsequent crop	100	33.3	33.3	0.22	-1.254^{ns}
Reducing of weeds	100	33.3	66.7		
Soil fertility	70	23.3	90		
Reducing of pests and diseases	30	10	100		

Ns: non significant statistically.

Table 2, is about production costs. 23.3% of farmers were believed the costs for rapeseed production is lower than wheat but 70% of them evaluated that are equal. Based on t value ($p \leq 0.01$) the option of " equal" in questionnaire was statistically significant in this survey.

Table 2. The cost of planting one hectare rapeseed compared to wheat

Options	Frequency	Percent	P-Value	t
More	20	6.7	0.01	$5.819^{\star\star}$
Equal	210	70		
Lower	70	23.3		

★★significant statistically.

So we focused on table 3, i.e. the income's viewpoint of farmers about planting rapeseed compared to wheat.

Table 3. The income of planting one hectare rapeseed compared to wheat

Options	Frequency	Percent	P-Value	t
More	180	60	0.01	$5.654^{\star\star}$
Equal	110	36.7		
Lower	10	3.3		

★★significant statistically.

As a result, the income obtained from rapeseed field's unit in uniform conditions was more than wheat' field in that area, 60% farmers believed. They were who had been achieved more than 1,800 $Kg.ha^{-1}$ seed yield. t value ($p \leq 0.01$) shows, this option is statistically important. Also another field survey showed a suitable and satisfactory economic yield for rapeseed can be competitive with wheat is about 1800-2000 $Kg.ha^{-1}$ (Azizi and Moayedi, 2012) [1].
Another success factor for rapeseed planting in Quchan is selecting proper sowing date because this area is a very cold region in north-east of Iran (Yazdani, 2007) [7].

Table 4. The farmer's viewpoints about governmental support for planting rapeseed.

Options	Frequency	Percent	Cumulative percent	P-Value	t
Very low	40	13.3	13.3	0.056	1.992^{ns}
Low	50	16.7	30		
Average	120	40	70		
Appropriate	90	30	100		

Table 4, shows the farmer's viewpoints about governmental support for planting rapeseed.
Only 30% of farmers believed that, the support of government was appropriate and 40% rated it as average.

CONCLUSIONS

Anyway, it is a fact that, with entering a new crop to a agricultural system we need to prerequisites such as technical support, agronomic and professional training, extensional programs, etc., for success.
In This research 66.7% of farmers believed, oilseed rape in cropping system could be reduce weeds and increase the yield of subsequent crop. 70% of farmers believed that oilseed rape- cereals rotation can increase the wheat seed yield after rapeseed. Eless of these beliefs, still 48% of farmers has a weak conception to expanding oilseed rape cultivation areas.

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