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## Examining Technical Skills Affecting Production of Canola in Iran

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### ABSTRACT

**Background:** Iran is dependent upon import of oil and annually 90 percent of its consumption imported from other countries. **Objective:** Canola producers in the Province of Qazvin were surveyed in order to explore their perception about technical skills influencing the production of canola. **Results:** Based on the perception of respondents, it was found out that the technical skills in harvesting and planting period could influence the production of canola. The results show that the technical skills during harvesting and planting caused 41% of variance on the dependence variable of increasing canola production. **Conclusion:** it is recommended that canola producers should be offered technical skills in areas of planting and harvesting canola.

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## INTRODUCTION

Improving productivity of human resources in agriculture sector would increase technical efficiency of farm management practices. In order to accomplish this, it is necessary to improve the skills and knowledge of farmers through agricultural extension and education programs.

There are two strategies which could dramatically increase agricultural production. First, by increasing the area under cultivation due to resource constraints which makes production difficult and expensive and second improving production in per unit area by using new technologies which are recommended by agricultural experts (Kalantari and Mirgozar, 2002).

Among agricultural products, oil seeds play an essential role in the food basket of population in Iran. The per capita consumption of vegetable oil is 16 kg per year, and country needs more than 1 million tons to fulfill its needs. The canola production capacity of country is about 5 million tons, while the current production is only 190 thousand (Negaresh, 2008). The average yield of canola in Iran is reported to be 1950 kg per hectare. The highest production level in 2001 was 5,200 ha and this amount was increased to 7,800 kg per hectare by 2010 (Association of Vegetable Oil Producers, 2010).

The gap between current and potential production level shows the main challenge is lack of managerial skills by canola producers in Iran. In order to increase the production, there is need for sustainable management and skills in areas of irrigation, combating pests and diseases, controlling weeds, using new equipment and application of new varieties (Hang *et al.*, 2009).

Yazdani and Sobhani (2008) examined the role of management, attitude and technical knowledge of farmers and reported that more than half of respondents were satisfied in producing canola. The results show that to increase canola production, there is need to improve the managerial skills of farmers through extension and education programs.

Homayonifar and Malekdar (2006) found out that factors such as farm size, working experience and attending extension classes were the most important factors in developing the areas under cultivation of canola in Iran.

Upadhyay *et al.* (2004) in research about managerial decision in canola production in Alberta region in Canada reported that managerial factors in spreading seeds and controlling weeds could affect the performance of canola.

Onyuma *et al.* (2006) in a research about effectiveness of management in agricultural production in Kenya indicated that establishing incentives, attending educational classes and empowering small scale farmers would improve their managerial skills.

Qazvin province is located in Central western region of Iran and is considered as one of the important area in agricultural production. More than 400 thousand acres of land in this province is allocated for agricultural

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production. Based on the latest statistics, the total areas under cultivation of canola in this province were 4200 hectares and more than 5200 tons of canola was produced. However, it is predicated that this amount could be increased five times.

The overall purpose of this study was to examine the perception of canola producers about technical skills which influence the farm management in Qazvin Province. The following objectives were formulated to guide the study: identify the personal characteristics of respondents; assess the perception of canola producers about impact of technical skills on farm management and provide suggestions for policy recommendations.

### 1. *Methodology:*

The methodology used in this study involved a combination of descriptive and quantitative research and included the use of correlation, regression and descriptive analysis as data processing methods. The total population for this study was 918 canola producers in province of Qazvin, and by using Cochran formula, 130 farmers were selected by random sampling method. Data were collected through interview schedules.

A series of in-depth interviews were conducted with some senior experts in the department of Agriculture in Qazvin to examine the validity of questionnaire. A questionnaire was developed based on these interviews and relevant literature. The questionnaire included both open-ended and fixed-choice questions. The open-ended questions were used to gather information not covered by the fixed-choice questions and to encourage participants to provide feedback.

The final questionnaire was divided into several sections. The first section was designed to gather information about personal characteristics of respondents. The second section was designed to measure the attitudes of respondents about technical factors that improve the farm management. The respondents were asked to indicate their agreements with statements by marking their response on a five point Likert-type scale.

Content and face validity were established by a panel of experts consisting of faculty members at Islamic Azad University and experts in department of Agriculture in Qazvin. A pilot study was conducted with 30 managers who had not been interviewed before the earlier exercise of determining the reliability of the questionnaire for the study. Computed Cronbach's Alpha score was 78.0%, which indicated that the questionnaire was highly reliable.

Dependent variable in the study included the amount of canola increased. The independent variables in this research study were technical skills in producing canola. For measurement of correlation between the independent variables and the dependent variable correlation coefficients have been utilized and include Pearson test of independence. The stepwise regression method was also used to explain the variance in the perception of respondents about role of technical skills in increasing canola production.

### 2. *Results:*

The results of descriptive statistics indicated that all respondents were male with average age of 44 years old and more than 41 percent had diploma and higher. The average production of canola was 2900 kilograms and average area under cultivation of canola was slightly less than 7 hectares.

In order to find the perception of respondents about their attitudes about role of technical skills in planting canola production, they were asked to express their views. The highest mean number refers to the using the organic fertilizers in planting canola (mean= 2.73) and lowest mean number refer to the right amount of using NPK fertilizers (mean=1.90).

The results of respondents' views about the importance of technical skills in harvesting canola show that the highest mean number refers to storing seeds in a short time period (mean=2.48) and lowest mean number refers to identifying the right time for harvesting canola (mean=1.29).

Spearman coefficient was employed for measurement of relationships between independent variables and dependent variable. The results show that there were relationship between perception of respondents about increasing canola production and working experience in canola production, areas under cultivation of canola, technical skills in planting and harvesting as independent variables.

The result for regression analysis by stepwise method indicated that 41% of the variance in the perception of respondents about role of technical skills in increasing canola could be explained by the technical skills in planting and harvesting canola.

### 3. *Discussion:*

The perception of canola producers in the Qazvin province about the role of technical skills in increasing canola production was discussed in this article and the results demonstrated that opinions and attitudes of respondents to a great extent depend upon the technical skills in planting and harvesting canola production.

As the results of study showed, there was relationship between perception of respondents about increasing canola production and working experience in canola production, areas under cultivation of canola, technical skills in planting and harvesting as independent variables. This result is in accordance with findings of research by Shahroodi (2006) and Upadhyay *et al.* (2004).

As the regression analysis showed, the role of technical skills in planting and harvesting caused 41% of variance on the perception of respondents regarding increasing canola. This result is consistent with Kalaitzandonakes and Dunn (1995) and Onyuma *et al.* (2006) conclusion in which technical skills in harvesting and planting influence canola production.

The findings show that variable using organic fertilizers is the first priority among producers in the planting canola production. Storing seeds for a short time period was recognized as the most important factor that affect the production of canola during harvesting. Kay and Edwards (1994) pointed out the importance technical skills in planting and harvesting canola.

#### 4. Conclusion:

There is need for more information about benefits of canola production. It is also important to develop policies that benefit canola farmers and attend their technological needs. In this regard, strengthening the linkage between extension institutions and farmers to consider their role in developing appropriate technology would accelerate the adoption of technical skills by farmers.

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