The Study of Effective Parameters on Integrated Management in Order for Achieving A Sustainable Agriculture In Summer-Crop Greenhouses in Khuzestan Province

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Abstract: The goal of the current research is to examine the effectiveness of parameters in integrated management in order for achieving a sustainable agriculture in summer-crop greenhouses in Khuzestan Province. This research is of practical type and is based on survey research method, done in Khuzestan province and it uses questionnaires and interviews as data collection methods. 90 summer crop greenhouses in Khuzestan have been surveyed as the statistical society. The validity of this research has been confirmed by a panel of experts and its reliability by distributing 30 copies of questionnaires and analyzing the result by SPSS software by 11.5 Cronbach's alpha score which led to 0.76 and 0.71 coefficients for integrated management and knowledge of skills, respectively makes the reliability outcome, desirable. As the result of this study, it was proved that individual’ parameters like age, education, field of study, and job experience, can cause a meaningful difference in integrated management of the greenhouses. Furthermore, there exists a significant statistical relation of 99% between gardeners’ integrated management and their knowledge of skills.

Key words: Integrated management, summer-crop greenhouse, Khuzestan Province - Iran.

INTRODUCTION

The unrestrained use of toxins is in contradiction to the ecological principals and can cause various problems such as formation of species resistant to toxins, undesirable effects on other non-target organisms, left over of chemical substances in agricultural products, and product poisoning which will directly affect consumers’ health. Investigations had shown that the status of toxic leftovers in products is not desirable. For instance, in cucumber and product in Charmahal Bakhtiari Province, 3 ppm of Diazinon pesticide was detected which was 30 times more than standard level. Also in tomato product the mentioned substance was 5 times more than standard level. In cucumber crops also kenfidore pesticide was reported to be twice more than the standard level in Varamin town (greer, L., 2000).

In Iran, Greenhouse cultivation has been very prevalent in recent years and due to its advantages and economic profits has become popular in comparison with outdoor cultivation. Although when speaking of controlled (greenhouse) cultivation, It is meant not only controlling the environmental factors which leads to increasing functionality, but also controlling the hygienic status of products which is the producer’s job. Controlled cultivations remind us that we should put all our efforts for producing crops which are environmentally friendly. In greenhouse cultivations, gardeners use a great deal of fertilizers and chemical pesticides which cause a lot of harmful chemicals to be left in products specially row products which are directly available to the consumers (Karami, A., 2008). Consequently, examination of effective parameters on integrated management in order for achieving a sustainable agriculture in summer-crop greenhouses in Khuzestan Province is an important step towards using less of toxins and preserving the environment. Many related researches have been done some of which are mentioned below. Heidary et al., (Heydari, A., 2010) devoted their research to examination of gardeners’ knowledge of integrated pest management (IPM) in Khorasan Razavi province. The results showed that gardeners’ general knowledge of integrated management is of a medium level. Besides, there is a positive and significant relation between individuals’ variables their knowledge of integrated management. Also in another research, Veisi et al., (Veisi, H., 2009), identified some factors including financial issues, individual traits, riskiness, and lack of information about substituted technologies, as major factors which are the reason why gardeners refuse to accept the new technologies presented for using integrated pest management.

In a research, Gareer (greer, L., 2000) worked on sustainable control of the aphids and white flies (or cotton honeydew) in greenhouse products and found biologic controlling methods the best way for consistent control of some natural enemies like pests, bees, sticky color traps and it controls to a great extent the population of pests.
MATERIALS AND METHODS

This research is carried out in 2010 in Khuzestan province. Its statistical society includes all the greenhouses in Khuzestan which are 90 units according to the statistics from Jihad organization of agriculture in Khuzestan released in the year 2010. From the viewpoint of research taxonomy based on goal, the present research has been of theoretical-functional nature and regarding the population of statistical society, total numbering method was used. From the perspective of supervision and control, it’s of field Type, and also from the viewpoint of data collection, has been of descriptive-survey research type. The data collection devices have been consisted of questionnaires which has been designed based on research hypotheses. This questionnaire includes 4 sections comprised of individual identifications of farmers, technical specifications of greenhouse units and their utilized systems, and individuals’ knowledge, and finally reports from evaluation of gardeners’ view about integrated pest management. To confirm the validity of this research a panel of experts was used and for its reliability, 30 copies of questionnaires were distributed and the result were analyzed by an SPSS software by 11.5 Cronbach's alpha score and the reliability was noticed to be desirable. The results are shown in table (1) below.

Table 1: Reliability of different sections of the questionnaire.

<table>
<thead>
<tr>
<th>Number</th>
<th>Sections of questionnaire</th>
<th>Reliability (Cronbach's alpha score)</th>
</tr>
</thead>
<tbody>
<tr>
<td>1</td>
<td>Evaluation of views to integrated management</td>
<td>0.7624</td>
</tr>
<tr>
<td>2</td>
<td>Knowledge of skills</td>
<td>0.7189</td>
</tr>
</tbody>
</table>

Discussions and Conclusion:

Theoretical Findings:

Table 2: Indicates gardeners’ personal and professional traits.

<table>
<thead>
<tr>
<th>Variables</th>
<th>Average</th>
<th>Minimum</th>
<th>Maximum</th>
</tr>
</thead>
<tbody>
<tr>
<td>Age (year)</td>
<td>39.8</td>
<td>24</td>
<td>60</td>
</tr>
<tr>
<td>Level of education (percent)</td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>job experience related to agriculture (year)</td>
<td>9.96</td>
<td>1</td>
<td>35</td>
</tr>
<tr>
<td>job experience in greenhouse (year)</td>
<td>4.35</td>
<td>1</td>
<td>10</td>
</tr>
<tr>
<td>Area of greenhouse (square meter)</td>
<td>6500</td>
<td>3000</td>
<td>10000</td>
</tr>
</tbody>
</table>

Table 3: Indicates the reasons for not accepting the integrated management by gardeners.

1. Lack of enough knowledge about substituted technologies 43%
2. Non existence of cost difference between organic and ordinary products 35%
3. Financial problems and the high cost of practical usage of integrated management 14%
4. Government’s lack of support and nonexistence of motives for establishing integrated management 8%

Analytical findings:

Table 4: Examination of different test results based on existence of difference or relation between personal and occupational variables and individuals’ view about integrated management of summer-crop greenhouses.

<table>
<thead>
<tr>
<th>Variables</th>
<th>Test type</th>
<th>Significance</th>
<th>Result</th>
</tr>
</thead>
<tbody>
<tr>
<td>Age</td>
<td>Statistics</td>
<td>f (6.85)</td>
<td>0.000</td>
</tr>
<tr>
<td>Level of education</td>
<td>Statistics</td>
<td>f (7.08)</td>
<td>0.000</td>
</tr>
<tr>
<td>Agricultural Field of study</td>
<td>Statistics</td>
<td>t (3.049)</td>
<td>0.003</td>
</tr>
<tr>
<td>job experience in greenhouse</td>
<td>Statistics</td>
<td>f (5.46)</td>
<td>0.006</td>
</tr>
<tr>
<td>job experience related to agriculture</td>
<td>Statistics</td>
<td>f (5.46)</td>
<td>0.102</td>
</tr>
<tr>
<td>Knowledge of skills</td>
<td>Spearman coefficient</td>
<td>(0.328)</td>
<td>0.003</td>
</tr>
</tbody>
</table>

Based on findings of table 4, variables like age, level of education, field of study, job experience in greenhouse and etc., can cause a significant difference of about 99% in individuals’ view about integrated management. Also there was not any difference of views and significant statistical difference between experienced gardeners and those who had less experience in agricultural issues.

Based on Spearman test results, a significant statistical relation about 99% was found between gardeners’ knowledge of skills and their view about integrated management. It seemed that older gardeners didn’t have a positive attitude towards integrated management and it can be caused partly because of their low level of education. While, those gardeners with higher level of education had a positive attitude. In this regard, concordance of the job and education of gardeners can help the improvement of attitude dramatically. In the case of agricultural experience, gardeners have already done trials and errors in the first year of their work and after many years they have acquired enough skill in achieving a sustainable integrated management policy in their greenhouses. Although it was found that since outdoor cultivation experience is very different from greenhouse cultivation, the former have little effect on achieving a sustainable integrated management in greenhouses.
On the other hand, findings show that those gardeners with higher knowledge of skills have been more successful in applying this acquired knowledge to achieve a sustainable criterion in their greenhouses.

**Suggestions:**

1) From the gardeners’ view point, lack of knowledge about alternative technologies instead of ordinary methods, nonexistence of cost differences between healthy and ordinary products, and financial problems and high costs of integrated management methods are considered as major reasons.

   It is worth considering the above mentioned elements by authorities in charge.

2) Testing the hypotheses indicated that factors like age, education, gardening experience, an agricultural related field of study, and knowledge of skills, are major parameters affecting application of integrated management methods in summer-crop greenhouses in Khuzestan. Consequently, it is of great advantage for the newly established greenhouses to have legal permits issued. Finally, not only consumers and producers will be safe from unrestrained use of toxins, but also it will be more environmentally friendly.

**REFERENCES**


