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Training needs of farmer's regarding improved production practices of Cauliflower in Agro climatic zone- XIV

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Abstract

Due to technological advancement in vegetable cultivation, there is a strong need to train the growers to keep them abreast about improved technologies for improving their productivity and increasing income. Thus, for organizing effective training programme, the present study was planned with objective to identify the training needs of vegetable farmers. The present study was conducted in Jaipur district of Rajasthan which was selected purposively. The Jaipur district consists of 13 panchayat samities, Out of which two panchayat samities namely Bassi and Amber were selected by purposively on the basis of the highest area and production. Amber and Govindgarh panchayat samities comprise 48 and 45-gram panchayats, respectively. Among these, 3-gram panchayats from Amber panchayat samiti and 3-gram panchayats from Govindgarh panchayat samiti were selected randomly. In all 12 villages were selected from the selected gram panchayats by using simple random sampling technique and a sample of 84 cauliflower growers was selected from these villages by using proportionate random sampling technique. It was observed that the cauliflower growers required more training in some of crucial training areas viz; "knowledge about method of application of phosphatic fertilizers", "appropriate time of harvesting". The cauliflower growers perceived the least training needs areas like "knowledge about use of trace /minor elements or bio-fertilizers" and "knowledge about depth of sowing" of improved cauliflower production technology.

Keywords: Training, need, cauliflower and grower

1. Introduction

Vegetables being cash crop can play a significant role for improving the livelihood of farmers, particularly small and marginal farmers. But the productivity level of farmers is very low particularly of resource poor farmers. The farmers could increase production and productivity of through adoption of new technologies. India is the seventh largest country in the world. Its total geographical area is 328 million hectares, which is about 2.42 percent of the world area and the total population is 121.02 crores as per the census of 2011 (Indian Economic Survey 2011). It has about 17.5 percent population of the world. About 75.11 percent population lives in rural areas. The main occupation of rural people is agriculture, therefore, agriculture is considered to be the backbone of Indian economy. Vegetables play an important role in the maintenance of human health. These make diet nutritive and balanced. A balanced diet requires a proper quota of fresh vegetables. About 300 gm of vegetables are needed (90 gm root vegetables, 120 gm green vegetables and 90 gm other vegetables). But, about 220.8 gm vegetables per day per capita are available (Indian Agriculture, 2011). Cauliflower (*Brassica oleracea* var. *botrytis*) is one the most important as well as popular winter vegetable crops, which is grown throughout the country

The word 'cole' seems to have been abbreviated from the word "Caulis" meaning stem. cauliflower is grown for its white tender head or curd, which is used as a vegetable, for soup and pickle. It is having a good nutritive value. It contains good amount of vitamins like vitamin A, C and fair amount of proteins and fibers. The cauliflower is also a good source of minerals like Ca, Mg, P, Fe, Na and S.

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Table 1: Average nutritive value of cauliflower (per 100 g of edible portion)

| | | | | | |
|---------------------|-------------|----------|------------------|-----------|-------------|
| Moisture | 90.8 | g | Vitamin A | 51 | I.U. |
| Protein | 2.6 | g | Thiamine | 0.04 | Mg |
| Fat | 0.4 | g | Riboflavin | 0.10 | Mg |
| Minerals | 1.9 | g | Nicotinic acid | 1.0 | Mg |
| Fiber | 1.2 | g | Vitamin C | 55 | Mg |
| Other carbohydrates | 4.0 | g | Calories | 30 | Mg |
| Calcium | 33 | mg | Sodium | 53 | Mg |
| Magnesium | 20 | mg | Potassium | 1.38 | mg |
| Oxalic acid | 19 | mg | Cooper | 0.05 | mg |
| Phosphorus | 57 | mg | Sulphur | 2.81 | mg |
| Iron | 1.5 | mg | | | |

Source: Choudhary, B (1983) "Vegetable" pp.71,B.

2. Research Methodology

The present study was conducted in Jaipur district of Rajasthan which was selected purposively. The Jaipur district consists of 13 panchayat samities, Out of which two panchayat samities namely Bassi and Amber were selected by purposively on the basis of the highest area and production. Amber and Govindgarh panchayat samities comprise 48 and 45-gram panchayats, respectively. Among these, 3-gram panchayats from Amber panchayat samiti and 3-gram panchayats from Govindgarh panchayat samiti were selected randomly. In all 12 villages were selected from the selected gram panchayats by using simple random sampling technique and a sample of 84 cauliflower growers was selected from these villages by using proportionate random sampling technique. An interview schedule was developed consisting of measuring devices of training needs and knowledge level. The schedule was pre-tested before administering to the actual respondents. The respondents were interviewed personally by the investigator and data were collected in the schedules.

To identify the training needs of cauliflower growers in the areas viz., preparation of soil and soil testing, seed rate and seed treatment, sowing and high yielding varieties, transplanting, application of manures and fertilizers, irrigation management, plant protection measures, harvesting / storage and processing.

The respondents were asked to state the training needs in the order of priority as required by them on three point continuum scale viz. most needed, needed and least needed. The objective was to measure the priority of training needs which is required by them. Then score, frequency and percentage were worked out to arrange the training needs in the order of priority.

3. Results and Discussion

It is commonly accepted fact that training plays a vital role in imparting vocation-oriented skill which facilitates the speedy transfer of technology. In order to make training a really profitable venture it must be location specific and need based. Training is one of the most commonly used devices that impart knowledge and skill to the cauliflower growers. Hence it is important to know the training needs of the cauliflower growers *i.e.* what is and what ought to be for achieving the desired results. The training areas were classified as: most needed, needed and least needed on the basis of their frequency, per cent and mean scores are analyzed for each sub area among the 9 selected broad areas.

It is evident from the mean scores Table1 that the cauliflower growers perceived the most needed training in "knowledge about method of application of phosphatic fertilizers" and "appropriate time of harvesting", with reported by 2.64 MS and 2.60 MS and as such these were ranked at first and second places, respectively. The other training areas like "knowledge about time of application of phosphatic fertilizers" and "knowledge of identification of insect pests", with 2.53 MS, 2.47 MS and as such these were ranked at 3rd, 4th, respectively. Whereas the cauliflower growers perceived the least needed training areas in order to "knowledge about use of trace /minor elements or bio-fertilizers", "knowledge about depth of sowing" and "knowledge about time of application of nitrogenous fertilizers" with 1.72 MS, 1.75 MS, 1.80 MS and as such these were ranked at 27th, 26th, 25th places, respectively. From the above results, it may be concluded that "knowledge about method of application of phosphatic fertilizers" and "appropriate time of harvesting" were perceived by the cauliflower growers as the most needed training areas for recommended cauliflower production technology whereas, "knowledge about use of trace /minor elements or bio-fertilizers" was perceived as the least needed training area by the cauliflower growers

Majority of respondents were interested in "knowledge about method of application of phosphatic fertilizers" (2.64 MS), "appropriate time of harvesting" (2.60 MS), "knowledge about time of application of phosphatic fertilizers" (2.53 MS) and "knowledge of identification of insect pests" (2.47 MS), respectively. This might be due to the fact that most of the respondents were having less knowledge regarding recommended practices of cauliflower production that's why they were interested more in getting training on recommended cauliflower production technology. The findings of the study are in line with the findings of Deshmukh and Mane (1999)^[1], Landge and Tripathi (2006)^[2] and Rajput *et al.* (2007)^[3].

Table 1: Training needs of cauliflower growers about recommended cauliflower production technology N = 84 (Multiple response)

| S.N. | Area of training | Most needed | | Needed | | Least needed | | Mean score | Rank |
|-----------|---|-------------|---------|-----------|---------|--------------|---------|------------|-------|
| | | Frequency | Percent | Frequency | Percent | Frequency | Percent | | |
| A. | Preparation of land soil testing | | | | | | | | |
| 1 | Knowledge of climate is important for cauliflower crop | 37 | 44.04 | 24 | 28.57 | 23 | 27.38 | 2.16 | XVIII |
| 2 | Knowledge of soil is important for cauliflower crop | 51 | 60.71 | 13 | 15.47 | 20 | 23.80 | 2.36 | VIII |
| 3 | Knowledge of soil treatment is necessary for cauliflower crop | 41 | 48.80 | 32 | 38.08 | 11 | 13.09 | 2.35 | IX |
| 4 | Knowledge of chemicals used of soil treatment | 47 | 55.95 | 13 | 15.47 | 24 | 28.57 | 2.27 | XIII |
| B. | Seed rate and seed treatment | | | | | | | | |
| 5 | Knowledge about seed rate of cauliflower crop | 25 | 29.76 | 36 | 42.85 | 23 | 27.38 | 2.02 | XXIII |
| 6 | Knowledge of seed treatment is | 28 | 33.33 | 36 | 42.85 | 20 | 23.80 | 2.09 | XXI |

| | | | | | | | | | |
|-----------|--|----|-------|----|-------|----|-------|------|-------|
| | necessary for cauliflower | | | | | | | | |
| 7 | Knowledge about name of chemicals for seed treatment | 47 | 55.95 | 24 | 28.57 | 13 | 15.17 | 2.40 | VI |
| 8 | Knowledge about dose of chemicals for seed treatment | 24 | 28.57 | 36 | 42.85 | 24 | 28.57 | 2.00 | XXIV |
| C. | Sowing high yielding varieties | | | | | | | | |
| 9 | Knowledge about time of sowing for cauliflower crop | 14 | 16.66 | 47 | 55.95 | 23 | 27.38 | 1.89 | XXV |
| 10 | Knowledge about depth of sowing | 25 | 29.76 | 13 | 15.47 | 46 | 54.76 | 1.75 | XXVI |
| 11 | Knowledge of spacing | 38 | 45.23 | 28 | 33.33 | 18 | 21.42 | 2.23 | XV |
| 12 | Knowledge of high yielding varieties and their characteristics | 49 | 58.33 | 19 | 22.61 | 16 | 19.09 | 2.39 | VII |
| d. | Transplanting | | | | | | | | |
| 13 | Knowledge about time of transplanting | 24 | 28.57 | 37 | 44.04 | 23 | 27.38 | 2.25 | XIV |
| 14 | Knowledge about treatment of seedlings before transplanting | 25 | 29.76 | 36 | 42.85 | 23 | 27.38 | 2.02 | XXII |
| 15 | Knowledge about area of nursery needed for one hectare of cauliflower | 45 | 53.57 | 22 | 26.19 | 17 | 20.23 | 2.33 | X |
| E. | Application of manure and fertilizer | | | | | | | | |
| 16 | Knowledge of recommended dose of FYM | 23 | 27.38 | 47 | 55.95 | 14 | 16.66 | 2.10 | XX |
| 17 | Knowledge about time of application of FYM | 40 | 47.76 | 32 | 38.09 | 12 | 14.28 | 2.33 | X |
| 18 | Knowledge about dose of nitrogenous fertilizers | 37 | 44.04 | 24 | 28.57 | 23 | 27.38 | 2.16 | XVIII |
| 19 | Knowledge about dose of phosphatic fertilizers | 47 | 55.95 | 13 | 15.47 | 24 | 28.57 | 2.27 | XIII |
| 20 | Knowledge about dose of potassic fertilizers | 46 | 54.76 | 13 | 15.47 | 24 | 28.57 | 2.23 | XV |
| 21 | Knowledge about method of application of nitrogenous fertilizers | 41 | 48.80 | 28 | 33.33 | 15 | 17.85 | 2.30 | XI |
| 22 | Knowledge about method of application of phosphatic fertilizers | 63 | 07.50 | 12 | 14.28 | 09 | 10.71 | 2.64 | I |
| 23 | Knowledge about method of application of potassic fertilizers | 33 | 39.28 | 29 | 34.52 | 22 | 26.19 | 2.13 | XX |
| 24 | Knowledge about time of application of nitrogenous fertilizers | 27 | 32.14 | 24 | 28.57 | 23 | 27.38 | 1.80 | XXVI |
| 25 | Knowledge about time of application of phosphatic fertilizers | 59 | 70.02 | 11 | 13.09 | 14 | 16.66 | 2.53 | II |
| 26 | Knowledge about time of application of potassic fertilizers | 47 | 55.95 | 24 | 28.57 | 13 | 15.47 | 2.40 | VI |
| 27 | Knowledge about use of trace / minor elements or bio-fertilizers | 24 | 28.57 | 13 | 15.47 | 47 | 55.95 | 1.72 | XXVII |
| 28 | Knowledge about time of application of trace / miner elements or bio-fertilizers | 47 | 55.95 | 13 | 15.47 | 24 | 28.57 | 2.27 | XIII |
| F. | Irrigation management | | | | | | | | |
| 29 | Knowledge of irrigation interval to be followed by cauliflower crops. | 38 | 45.23 | 23 | 27.38 | 23 | 27.38 | 2.17 | XVII |
| 30 | Knowledge about method of taking water sample. | 36 | 42.85 | 25 | 29.76 | 23 | 27.38 | 2.15 | XIX |
| G. | Plant protection measures | | | | | | | | |
| 31 | Knowledge of identification of insect-pests | 51 | 60.71 | 22 | 26.19 | 11 | 13.09 | 2.47 | IV |
| 32 | Knowledge about control of insect-pests | 50 | 59.52 | 22 | 26.19 | 12 | 14.28 | 2.45 | V |
| 33 | Knowledge about dose of insecticides | 37 | 44.04 | 29 | 35.52 | 18 | 21.42 | 2.23 | XVI |

| | | | | | | | | | |
|-----------|--|----|-------|----|-------|----|-------|------|-------|
| 34 | Identification of plant diseases | 38 | 45.23 | 23 | 27.38 | 13 | 15.47 | 2.05 | XXII |
| 35 | Control of plant diseases | 14 | 16.66 | 47 | 55.95 | 23 | 27.38 | 1.89 | XXV |
| 36 | Dose of fungicide | 14 | 16.66 | 47 | 55.95 | 23 | 27.38 | 1.89 | XXV |
| 37 | Knowledge about identification of weeds | 37 | 44.04 | 40 | 47.61 | 07 | 08.33 | 2.35 | IX |
| 38 | Knowledge about control of weeds | 47 | 55.95 | 24 | 28.57 | 13 | 15.47 | 2.40 | VI |
| 39 | Knowledge about dose of weedicide | 38 | 45.23 | 23 | 27.38 | 23 | 27.38 | 2.17 | XVII |
| H. | Harvesting and storage | | | | | | | | |
| 40 | Appropriate time of harvesting | 56 | 66.66 | 14 | 16.66 | 13 | 15.47 | 2.48 | III |
| 41 | Method of harvesting | 37 | 44.04 | 24 | 28.57 | 23 | 27.38 | 2.16 | XVIII |
| 42 | Method of storing of cauliflower | 48 | 57.14 | 22 | 26.19 | 14 | 16.66 | 2.40 | VI |
| I. | Processing | | | | | | | | |
| 43 | Knowledge of grading and standardization | 48 | 57.14 | 13 | 15.47 | 23 | 27.38 | 2.29 | XII |
| 44 | Knowledge of packaging | 37 | 44.04 | 24 | 28.57 | 23 | 27.38 | 2.16 | XVIII |

4. Conclusion

It was observed that the cauliflower growers required more training in some of crucial training areas viz; “knowledge about method of application of phosphatic fertilizers”, “appropriate time of harvesting”, “knowledge about time of application of phosphatic fertilizers” and “knowledge of identification of insect pests”. The cauliflower growers perceived the least training needs areas like “knowledge about use of trace /minor elements or bio-fertilizers”, “knowledge about depth of sowing” and “knowledge about time of application of nitrogenous fertilizers” of improved cauliflower production technology.

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