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Knowledge and attitude level of the vegetable growers about the production technology under covid – 19 pandemic situation of Tikamgarh district of Madhya Pradesh

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Abstract
The study revealed that majority 62.50 per cent of the vegetable growers had medium level of knowledge index regarding recommended practices of vegetable under pandemic 19 situations, while 23.33 per cent and 14.16 per cent of vegetable growers had low and high level of knowledge index, respectively. majority of the vegetable growers 37.50 were having neutral attitude towards vegetable growers followed by 25.00 per cent had favourable attitude, 7.50 per cent had most unfavourable attitude, 18.33 per cent had unfavourable attitude towards vegetable growers under pandemic – 19 situation, The level of knowledge was observed higher in most of the practices (except top dressing of fertilizers and recommended verities) of recommended production technology of vegetable among the respondents. The independent variables like- age, education and extension contact had positive and highly significant correlation association and social participation, land holding, annual income, sources of information utilization and scientific orientation of the vegetable growers had positive and significant correlation association with their level of knowledge of recommended production technology of vegetable. Whereas size of family was found to have non-significant correlation association with level of knowledge of recommended production technology of vegetable. Majority of the vegetable growers cultivated crop on their farm but due to pandemic market were closed so they sale on low price at their farm.

Keywords: knowledge level; vegetable growers & production technology

Introduction
Modern agriculture has been largely successful in meeting the energy needs of poor population in developing countries. Agriculture is the largest private enterprise in India and will continue to be the life line of the Indian economy even in foreseeable future. It contributes nearly 22.00 per cent to national gross domestic product (G.D.P). In food sector, alone agriculture contribute about 250 thousand crores rupees annually and also provide direct employment to about 234 million people. Horticulture sector cover only 8.00 per cent of total crop area in the country and it contribute 24.50 per cent to G.D.P. and 54.55 per cent to export earning in agricultural sector (Chadha, 2002). It ranks second in fruits and vegetables production in the world, after China. As per National Horticulture Database (Second Advance Estimates) published by National Horticulture Board, during 2019-20, India produced 99.07 million metric tonnes of fruits and 191.77 million metric tonnes of vegetables. During the fiscal year 2018, Uttar Pradesh produced the largest share of vegetables in India, accounting for 15.4 percent. West Bengal came in second that year at 15 percent.
The scope to increase the productivity of vegetable to its potential would substantiate the need for promotion of vegetable cultivation technology in the farmer's field. One way by which extension scientists can contribute to this task is to find out better ways and means of promoting vegetable cultivation technology among the group of clientele. The current advances in vegetable production technology have demonstrated that to improve the practices have great potential for increasing the vegetable production. Therefore, raising the efficiency of the growers is essential for getting desire profit from the vegetable cultivation

Methodology
Tikamgarh district, where the researcher study was chosen for the study. Ganeshganj, Kundeshwer and Patha were purposively selected, because these have more vegetable growing area as compared to other near to city place. For this study 120 vegetable growers who had

minimum 3 years of experience in vegetable cultivation were selected randomly. To know the various characteristics of vegetable growers a scale developed by Pareek and Trivedi (1963) was used with some modifications. Measurements of level of knowledge about recommended production technology of vegetable crop was measured by using teacher made test. The data were collected with the help of well-structured, pre-tested, English version interview scheduled through personal contact and data were compiled, tabulated and analyzed to get draw the conclusion.

A simple ranking technique was applied to measure the constraints faced by vegetable growers. The statistical tools used were percentage, mean score, standard deviation and coefficient of correlation value.

Results and Discussion

Level of knowledge and attitude of the vegetable growers about the recommended production technology of vegetable in the present study knowledge refers to know how about different vegetable cultivation technology possessed by the vegetable growers. Adequate knowledge is essential to vegetable growers for the success and profitable cultivation. It was therefore thought necessary to obtain information from the vegetable growers about the knowledge they possessed about vegetable cultivation practices. The data regarding level of knowledge are given in Table 1.

Table 1: Distribution of the respondents according to their level of knowledge index n = 120

Sr.	Level of knowledge index	Number	Percent
1	Low (below 56.27score)	28	23.33
2	Medium (between 56.28 to 75.75 score)	75	62.50
3	High (above 75.75 score)	17	14.16
	Level of Attitude index		
4	Most unfavourable (< 61)	22	18.33
5	Unfavourable (61-68)	17	14.16
6	Neutral (69-84)	45	37.50
	Favourable (85-93)	30	25.00
	Most favourable (>93)	9	7.50

Mean= 66.01 S.D. = 9.74

It is observed from the Table 1 that majority 62.50 per cent of the vegetable growers had medium level of knowledge index regarding recommended practices of vegetable, while 23.33 per cent and 14.16 per cent of vegetable growers had low and high level of knowledge index, respectively. Thus it can be concluded that 62.50 per cent of the respondents had medium level of knowledge regarding recommended production technology of vegetable. Majority of the vegetable growers neutral and favourable attitude regarding vegetable growing and precaution against pandemic. This finding is in the line with finding of Mate (2005), Parmar (2006), Mewara *et al.* (2007), Kadu (2009) and Kadam *et al.* (2010) [3]. Majority of the vegetable growers 37.50 were having neutral attitude towards vegetable growers followed by 25.00 per cent had favourable attitude, 7.50 per cent had most unfavourable attitude, 18.33 per cent had unfavourable attitude towards vegetable growers under pandemic – 19 situation

Practice wise knowledge level of vegetable growers about recommended vegetable production technology

Table 2 reveal that the knowledge about time of sowing, irrigation and inter-culturing were equal cent per cent among the vegetable growers and ranked first. The obtained mean score of level of knowledge of preparation of land (91.50 per cent), spacing (82.08 per cent), type of soil (82.08 per cent), nursery management and transplanting (77.96 per cent), harvesting (73.63 per cent), insect-pest control (32.00 per cent), were good among the respondents and were ranked second, third, fourth, fifth, sixth and seventh, respectively.

Table 2: Practice wise mean score knowledge index of improved vegetable production technology among the respondents and their rank order (n = 120)

Sr. No.	Recommended practices	Total maximum score	Total obtained score	Obtained mean score index	Rank
1	Type of Soil	240	197	82.08	IV
2	Nursery management and transplanting	1280	998	77.96	V
3	Time of sowing	135	111	82.22	III
4	Preparation of land	260	237	91.15	II
5	Recommended varieties	870	402	46.20	XI
6	Spacing	240	197	82.08	IV
7	Fertilizers				
	Basal fertilizer	550	292	53.09	IX
	Top dressing	1150	553	48.08	X
8	Irrigation	120	120	100.00	I
9	Inter-culturing	120	120	100.00	I
10	Weeding	820	495	60.36	VIII
11	Insect pest control	1600	512	32.00	XII
12	Disease control	1200	760	63.33	VII
13	Harvesting	550	405	73.63	VI

The mean score of level of knowledge regarding package of practices *viz.,* basal fertilizers (53.09 per cent), weeding (60.36 per cent), disease control (63.33 per cent), top dressing of fertilizers (48.08 per cent) and recommended varieties (46.20 per cent) were found low and ranked eight, nine, ten, eleven and twelve, respectively. From the above discussion, it

can be concluded that considering the self experience and extension contact the level of knowledge was observed higher in most of the practices among the vegetable growers. The findings are agreement with the finding of Sasane *et al.* (2011) [7] and Biradar *et al*. (2013) [2].

Association between characteristics of vegetable growers and their level of knowledge of recommended production technology of vegetable

The level of knowledge recommended agricultural technology is a unit act but a complex process involving sequence and thought of action. The action of individual farmers is governed by personal, socio-economical, situational, communicational and psychological variables with their level of knowledge of improved vegetable production technology were worked out by calculating coefficient correlation. The results in this regard are depicted as under.

Table 3: Relationship between the characteristics of vegetable growers and their level of knowledge of recommended production technology of vegetable. n = 120

Sr. No.	Independent Variables	Correlation-Coefficient ('r' value)
1	Age	0.3209**
2	Education	0.2696**
3	Size of family	0.0173 (NS)
4	Social participation	0.1757*
5	Land holding	0.1741*
6	Annual income	0.1838*
7	Extension contact	0.2453**
8	Sources of information utilization	0.1747*
9	Scientific orientation	0.1820*

NS = non significant
*= significant at 0.05 level
**= significant at 0.01 level

It is apparent from the data presented in the Table 3 that the age of the vegetable growers had positive and highly significant correlation with their level of knowledge of recommended production technology of vegetable. The data presented in Table 3 reflect that the level of knowledge of the vegetable growers regarding recommended production technology had positive and highly significant correlation with their level of education, which indicate that education play an important role in influencing the level of knowledge of new technology among the vegetable growers. As reveal from data presented in Table 3 there was non-significant association between size of family and level of knowledge of recommended production technology of vegetable. The data presented in Table 3 clearly indicate that social participation by the vegetable growers had significant correlation with their level of knowledge of recommended production technology of vegetable. The data presented in Table 3 clearly indicate that size of land holding of the vegetable grower's had positive and significant association with their level of knowledge of recommended production technology of vegetable. Thus, the null hypothesis H1.5 was rejected. It is apparent from the data presented in the Table: 3 that annual income of the vegetable growers had positive and significant correlation with their level of knowledge of recommended production technology of vegetable. The data presented in Table 3 clearly indicate that extension contact of the vegetable growers had positive and highly significant correlation with their level of knowledge of recommended production technology of vegetable. The data depicted in Table 3 show that the sources of information utilization of the vegetable growers had positive and significant correlation with their level of knowledge of recommended production technology of vegetable. It is apparent from the data presented in Table: 3 that scientific orientation of the vegetable growers had positive and significant correlation with their level of knowledge of recommended production technology of vegetable which indicate that scientific orientation had positive influence on knowledge of vegetable production technology.

Conclusion

The study was conducted to Knowledge level of the vegetable growers about the production technology of vegetable of Tikamgarh district of Madhya Pradesh. Ganeshganj, Kundeshwer and Patha were purposively selected, because these villages have more vegetable growing area near to district market. For this study 120 vegetable growers who had minimum 3 years of experience in vegetable cultivation were selected random sampling method and data were collected from them using a well-structured and pre-tested interview schedule. The collected data were analysed and tabulated. The level of knowledge was observed higher in most of the practices (except top dressing of fertilizers and recommended verities) of recommended production technology of vegetable among the respondents. The independent variables like- age, education and extension contact had positive and highly significant correlation association with knowledge of recommended production technology of vegetable crop by vegetable growers. The five variables *viz*., Social participation, land holding, annual income, sources of information utilization and scientific orientation of the vegetable growers had positive and significant correlation association with their level of knowledge of recommended production technology of vegetable. Remaining variable *viz.*, size of family was found to have nonsignificant correlation association with level of knowledge of recommended production technology of vegetable.

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