International Journal of Chemical Studies

P-ISSN: 2349–8528
E-ISSN: 2321–4902
IJCS 2020; 8(1): 1157-1160

Received: 04-11-2019
Accepted: 06-12-2019

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Knowledge of improved cultivation practices of watermelon by the respondents

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DOI: https://doi.org/10.22271/chemi.2020.v8.i1p.8407

Abstract
Watermelon (*Citrullus lanatus* L.) is grown in tropical and subtropical regions of the world. The present study conducted in Solapur district of Maharashtra state. Ten villages from one tahsil of these district were selected randomly having maximum area under watermelon cultivation. A total of 120 respondents from ten villages formed sample for the study. The data were obtained by interview schedule. The respondents were contacted personally and interviewed. Watermelon is important vegetable crop having good prospects in state as well as country. The total area under cultivation of watermelon in India is 92.00 thousand ha and production 2292.00 thousand MT. (Source: Ministry of Agriculture, Govt. of India, 2015-16). Watermelon is an important vegetable crop grown in Solapur district. In this research observed that, 100 per cent had complete knowledge about favorable climate for watermelon, 67.50 per cent respondents had complete knowledge of seed required for watermelon cultivation, 78.33 per cent of the respondents had complete knowledge about Madhubala variety, 70.00 per cent of the respondents had complete knowledge of Sugarbaby variety of watermelon, 52.50 per cent of the respondents had complete knowledge about recommended basal dose of fertilizers, 78.33 per cent had complete knowledge about major weeds in watermelon i.e *Gajargavat*, 80.33 per cent of the respondents had complete knowledge of cultural methods for weed management, 83.33 per cent of the respondents had complete knowledge about chemical methods for controlling pests of watermelon and 93.33 per cent of the respondents had complete knowledge about major diseases of watermelon. In this research observed that overall knowledge, 72.50 per cent of the respondents had medium level of knowledge about improved cultivation practices of watermelon followed by 15.83 per cent and 11.67 per cent of the respondents having high and low levels of knowledge.

Keywords: Knowledge, improved cultivation practices, watermelon and respondents

Introduction
Watermelon (*Citrullus lanatus* L.) is grown in tropical and subtropical regions of the world. The total area under cultivation of watermelon in India is 92.00 thousand ha and production 2292.00 thousand MT. (Source: Ministry of Agriculture, Govt. of India) A number of India's states grow watermelon. Interestingly, these regions vary considerably in their climate, but the adaptability and versatility of watermelon allows the fruit to thrive different types of soils. Watermelon has a sweet, crisp, juicy and hydrating flavor. Its texture is mildly granular, but its roughly 90 percent water content makes for an overwhelmingly juicy fruit. Watermelon has a sweet, crisp, juicy and hydrating flavor. Its texture is mildly granular, but its roughly 90 percent water content makes for an overwhelmingly juicy fruit. Watermelon is important vegetable crop having good prospects in state as well as country. Watermelon is an important vegetable crop grown in Solapur district.

Material and Methods
The study was conducted in Solapur district. Solapur is located in the western part of Maharashtra. In Solapur district, Malshiras tahsil was purposively selected for the study on the basis of highest area under watermelon. The list of watermelon growing villages of Malshiras tahsil was obtained from Taluka Agriculture Officer. Ten villages from this tahsil were purposively selected for the study on the basis of area under watermelon crop. Twelve watermelon growers were selected from each village by simple random sampling method. Thus, in all 120 watermelon growers were selected by simple random sampling method from Malshiras tahsil of Solapur district.

Result and Discussion

Table 1: Distribution of respondents according to their knowledge of improved cultivation practices of watermelon

Sr. No.	Recommended practices	Knowledge					
		Complete		Partial		No	
		Frequency	Percent	Frequency	Percent	Frequency	Percent
1.	**Soil type** : sandy, loam, medium to black, well drained and rich in organic matter	120	100.0	00	00.00	00	00.00
2.	**Climate :** warm, highest sunlight and dry climate	120	100.0	00	00.00	00	00.00
3.	**Preparatory tillage :** A) Land preparation 1.Ploughing	120	100.0	00	00.00	00	00.00
	2.Harrowing 2-3 times and leveling	120	100.0	00	00.00	00	00.00
	3.Rotavator	120	100.0	00	00.00	00	00.00
	B) Time of Sowing 1.Summer-15 Dec-15 Feb (Temp.17^{0}c to 18^{0}c)	120	100.0	00	00.00	00	00.00
	2.Kharif- June-July	63	52.50	40	33.33	17	14.17
	C) Planting distance: 2 x 0.5 m	90	75.00	18	15.00	12	10.00
4.	**Seed and Sowing :** 2.0-3 kg / ha.	81	67.50	27	22.50	12	10.00
5.	**Selection of variety**						
	a] Sugar Queen	120	100.0	00	00.00	00	00.00
	b] Madhubala	94	78.33	17	14.17	09	07.50
	c] Sugarbaby	84	70.00	24	20.00	12	10.00
	d] Madhu	78	65.00	26	21.67	16	13.33
	e] Arka manik	70	58.34	29	24.16	21	17.50
	f] Arka jyoti	68	56.67	36	30.00	16	13.33
	g] Milan	63	52.50	28	23.33	29	24.17
	h] Badshah	59	49.17	41	34.16	20	16.67
	i] Super king	53	44.17	42	35.00	25	20.83
	j] Other varieties	51	42.50	46	38.33	23	19.17
6.	**Mulching**						
	A] Spread 25-30 micron thick mulching paper (polythene) with 4 feet width on broad bed cover edges with soil. Be aware that paper should be spread parallel to bed and should not loose easily. Generally required 8-10 kg paper /ha.	98	81.67	14	11.66	08	06.67
	B] Day before transplanting make holes at distance 15 cm to both sides of laterals. Distance between two holes should be 2 m in line. After making holes wet broad bed with drip irrigation.	102	85.00	13	10.83	05	04.17
	C] Transplanting should be done with 12 day old plants. (Requires 10000-12000 seedlings/ ha.)	106	88.33	08	06.67	06	05.00
7.	**Recommended dose of fertilizers**						
	Application of fertilizers						
	Major nutrients						
	1] Basal dose (full dose of P, K and 50% N per ha.)	63	52.50	47	39.17	10	08.33
	N / P / K						
	50 kg. / 50 kg. / 50 kg.						
	2] Top dressing (Remaining 50% N per ha.)						
	50 kg. / - / -	65	54.17	48	40.00	07	05.83
	Application of manure						
	15-20 tonnes / ha	75	62.50	27	22.50	18	15.00
8.	**Method used for application of fertilizers**						
	A] Broadcasting by hand	86	71.67	25	20.83	09	07.50
	B] Fertigation (through drip irrigation) –according to recommended dose	91	75.83	16	13.34	13	10.83
9.	**Micronutrients deficiency in watermelon**	38	31.67	57	47.50	25	20.83
10.	**Major weeds in watermelon field-***Gajargavat, Hariyali*	94	78.33	21	17.50	05	04.17
11.	**Methods of integrated weed management**						
	a] Cultural method						
	-Hand weeding -Ploughing -Harrowing	97	80.33	12	10.00	11	09.17
	b]Chemical method	71	59.17	35	29.17	14	11.66
	c] Biological method	34	28.34	37	30.83	49	40.83
12.	**Irrigation management**						
	1. In Summer (5-6 days) Application of water should be done at morning before 9.00 AM	106	88.33	9	07.50	05	04.17

	2. Water requirement increases according to growth of plant. Uneven irrigation causes fruit cracking and change in size.	99	82.50	13	10.83	8	06.67
	Method of irrigation						
	a] Flood method	89	74.16	22	18.34	9	07.50
	b] Drip method	82	68.33	26	21.67	12	10.00
13.	**Proper stage of harvesting**						
	1] Mature Stage-Heavy Dull Sound	120	100.0	00	00.00	00	00.00
	2] Drying of Tendril	120	100.0	00	00.00	00	00.00
14.	**Major pests of watermelon**						
	Leaf minor, red pumpkin beetle, fruit fly, aphid, jassid	90	75.00	22	18.33	08	06.67
15.	**Methods for controlling the pests of watermelon**						
	1] **Chemical method** { a) Leaf minor and b) Red pumpkin beetle:- Dimethoate 0.05% in 10 litre of water c) Fruit fly:- 20 ml Malathion/10litre water + 100 g Jaggery d) Aphid and e) Jassid:- 0.1% Malathion or Dimethoate @ 1.5 ml / litre water}	100	83.33	12	10.00	08	6.67
	2] **Mechanical method** { a) Leaf minor:- Yellow sticky trap, Pheromone trap, Light trap b) Fruit fly:- Rakshak trap (Dr. BSKKV, Dapoli)}	73	60.83	38	31.67	09	7.50
	3] **Biological method** { a) Leaf minor and b) Jassid :- NSKE 4% or Trizophos 20 ml/ 10litre }	33	27.50	41	34.17	46	38.33
16.	**Major diseases of watermelon**						
	Blast, powdery mildew, wilt	112	93.33	06	5.00	02	1.67
17.	**Methods for controlling the diseases of watermelon**						
	Chemical method { a) Blast:-Spraying Mancozeb or Copper oxychoride 25g/10 liter water b) Powdery mildew:-Spraying Carbendazim @ 10 g / 10 litre water c] Wilt:-Seed treatment with Thirum 3g.}	90	75.00	17	14.17	13	10.83
18.	**Average yield of watermelon**						
	40-50 Tonnes / ha.	108	90.00	06	5.00	06	5.00
19.	**Marketing channels available in your locality**						
	a)Self marketing	120	100.0	00	00.00	00	00.00
	b)By auction	102	85.00	12	10.00	06	05.00
	c) Agril. Produce Market Committee	94	78.33	20	16.67	06	05.00
	d)Other	76	63.34	31	25.83	13	10.83

Practice wise knowledge of watermelon growers

The knowledge of the respondents regarding the recommended improved cultivation practices of watermelon presented in Table 1 is discussed below.

As far as soil type is concerned cent per cent respondents were growing watermelon in recommended soil type. It was found that all the respondents (100%) had complete knowledge about favorable climate for watermelon i.e. warm, highest sunlight and dry. It was observed that cent per cent of the watermelon growers had complete knowledge about land preparation tillage practices like ploughing, harrowing and rotavator. It was found that all the respondents were sowing watermelon during summer season in the month of Dec-Feb (Temp.-17^{0}c to 18^{0}c) and kharif season in the month of June-July. It was observed that three fourth (75.00%) respondents had complete knowledge of planting distance i.e. 2 x 0.5 m. It was observed that 67.50 per cent respondents had complete knowledge of seed required for watermelon cultivation. In respect of recommended watermelon varieties it was observed that cent percent of respondents had complete knowledge about Sugar Queen variety, while, 78.33 per cent of the respondents had complete knowledge about Madhubala variety and 70.00 per cent of the respondents had complete knowledge of Sugar baby variety of watermelon. It was observed that the overall respondents had complete knowledge of mulching practices in watermelon. Regarding fertilizer management, it was revealed that 52.50 per cent of the respondents had complete knowledge about recommended basal dose of fertilizers, while, 54.17 per cent of the respondents had complete knowledge about recommended top dressing dose of fertilizers and 62.50 per cent of the respondents had complete knowledge about recommended application of manure for watermelon cultivation. It was observed that more than three-fourth (75.83%) respondents had complete knowledge of fertigation (through drip irrigation), while, 71.67 per cent respondents had complete knowledge of broadcasting by hand for application of fertilizers. About 47.50 per cent respondents had partial knowledge about micronutrient deficiency in watermelon, while, 31.67 per cent had complete knowledge. It was found that large majority of respondents (78.33%) had complete knowledge about major weeds in watermelon i.e *Gajargavat* and *Hariyali*. It was observed that majority (80.33%) of the respondents had complete knowledge of cultural methods for weed management, while, 59.17 per cent of the respondents about chemical methods for weed management. Quite a large proportion (40.83%) of respondents had no knowledge of biological method of weed management. Majority of the respondents had complete knowledge about irrigation management and irrigation methods in watermelon. The recommended stage of harvesting of watermelon when drying of tendril with mature stage-heavy dull sound was completely known by all the respondents. It was found that three-fourth (75.00%) of the respondents had complete knowledge about major pests of watermelon, while, 18.33 per cent and 6.67 per cent of the respondents had partial and no knowledge, respectively. Methods for controlling the pests of watermelon was observed that 83.33 per cent of the respondents had complete knowledge about chemical methods for controlling pests of watermelon, whereas, 60.83 per cent of the respondents about mechanical methods and more than one fourth (27.50%) respondents had complete knowledge about

biological methods for controlling of pests in watermelon. Major diseases of watermelon were observed that large majority (93.33%) of the respondents had complete knowledge about major diseases of watermelon. Methods for controlling the diseases of watermelon were observed that three-fourth (75.00%) of the respondents had complete knowledge about chemical methods for controlling diseases of watermelon. Majority (90.00%) of the respondents had complete knowledge about average yield of watermelon. In marketing channels in locality, Majority of the respondents had complete knowledge about various marketing channels in their locality such as self-marketing, auction and Agril. Produce Market Committee.

Table 2: Distribution of the respondents as per their knowledge level of improved cultivation practices of watermelon

Sr. No.	Knowledge level	Frequency (N=120)	Per cent
1.	Low (Upto 72)	14	11.67
2.	Medium (73 to 82)	87	72.50
3.	High (83 and above)	19	15.83
	Total	120	100.00
		Mean=78.06	S.D=4.79

The data from Table 2 and Fig. 1 revealed that a majority (72.50%) of the respondents had medium level of knowledge about improved cultivation practices of watermelon followed by 15.83 per cent and 11.67 per cent of the respondents having high and low levels of knowledge, respectively.

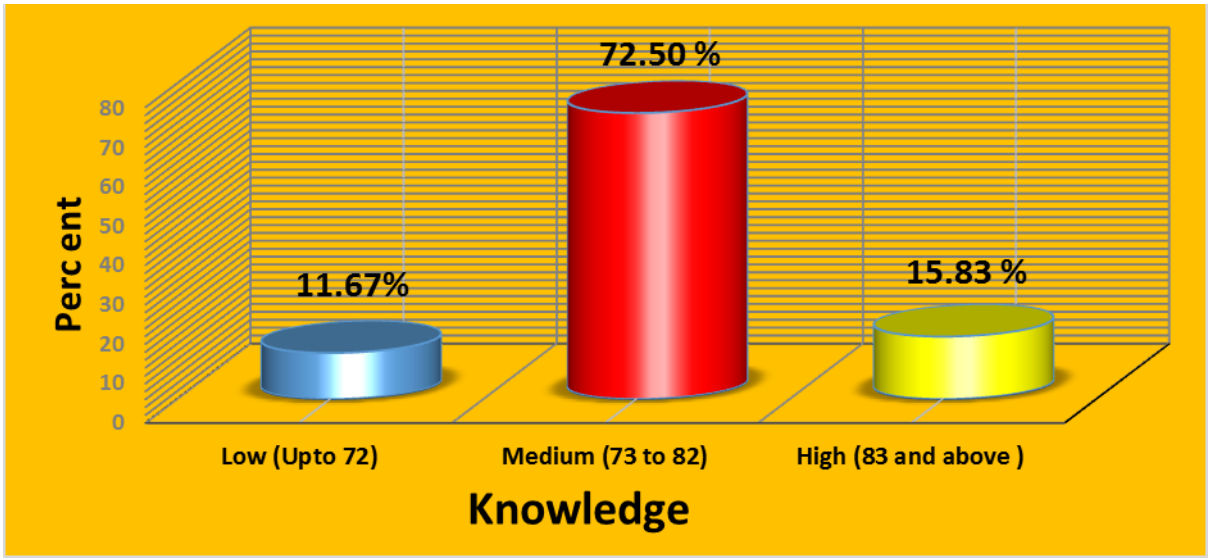

Fig 1: Distribution of the respondents as per their level of knowledge regarding cultivation practices in Watermelon

Conclusion

It was found that large number of respondents (72.50%) had medium level of knowledge of improved cultivation practices of watermelon. The researcher hopes that this research study would be highly useful in understanding the personal, socio-economic and psychological characteristics of the watermelon growers with their level of knowledge the improved cultivation practices technology.

Acknowledgement

The authors thankful to the Department of Agricultural Extension and Communication, Post Graduate Institute, Mahatma Phule Krishi Vidyapeeth, Rahuri, Maharashtra for providing all the inputs and facilities to carry out this study.

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