

RESEARCH ARTICLE

Knowledge of improved aonla cultivation by the tribal women of Udaipur district, Rajasthan

■ Vandana Vishwakarma, Snehlata Maheshwari and Dhriti Solanki

SUMMARY

Aonla or Indian gooseberry (*Emblica officinalis* Gaertn) is a wonderful fruit and one of the precious gifts of nature to man. The popular use of this fruit is in indigenous medicines (Ayurvedic system) viz., trifla and chayavanprash. In addition, the aonla fruits are preserved and sold in the form of murabba, pickles, candy, jelly and jam. Aonla is an important and highly valued fruit grown in India. There is a wide scope to improve and increase the aonla production by enhancing the knowledge regarding improved aonla cultivation. Knowledge plays an important role in adoption of improved cultivation and post harvest practices of aonla. The present study was conducted in Jhadol panchayat samiti of Udaipur district, Rajasthan to assess knowledge of tribal women regarding improved aonla cultivation and post harvest practices. Total ten villages were selected from three clusters viz., Ogha, Jhadol and Baghpura. A sample of 200 tribal women was selected through random sampling technique from selected villages with proportion to the size of sample in the selected villages. Selected respondents were interviewed personally using well structured pre tested interview schedule. The collected data were analyzed by using appropriate statistical tool to infer results. The study revealed that the respondents possessed average knowledge with overall MPS 64.87 regarding improved cultivation practices of aonla. Knowledge assessment of the respondents regarding post harvest practices showed that they possessed average knowledge about post harvest practices with overall MPS 55.46.

Key Words : Knowledge, Cultivation, Post harvest practices, Aonla, Tribal women

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MEMBERS OF THE RESEARCH FORUM

Author to be contacted :

Vandana Vishwakarma, Faculty of Home Science, Kamla Nehru Institute of Physical and Social Sciences, Sultanpur (U.P.) India
Email : vandana27.sln@gmail.com

Address of the Co-authors:

Snehlata Maheshwari and Dhriti Solanki, Department of Home Science Extension and Communication Management, College of Home Science, Maharana Pratap University of Agriculture and Technology, Udaipur (Rajasthan) India

Aonla or Indian gooseberry (*Emblica officinalis* Gaertn.) is known for its medicinal and therapeutic properties from the ancient time in India and considered as a wonder fruit for health conscious population. Aonla production, in the yesteryears, has been exhibiting an upward swing in our country but its productivity is still much below the productive potentials due to old or indigenous practices. Its cultivation is also spreading rapidly in the semi-arid

regions of Maharashtra, Gujarat, Rajasthan, Andhra Pradesh, Karnataka, Tamil Nadu and Aravali ranges in Haryana and Kandi area in Punjab and Himachal Pradesh. Bhartiya Agro-Industries Foundation (BAIF) has now initiated aonla plantation, value addition as one of the major activities in the states of Uttar Pradesh, Gujarat, Rajasthan and Maharashtra.

MATERIAL AND METHODS

The study was conducted in 10 villages of Jhadol panchayat samiti of Udaipur district, Rajasthan purposively to analyze the knowledge of tribal women in improved aonla cultivation and post harvest practices. A sample of 200 tribal women was selected using random sampling technique. Selected respondents were interviewed personally using well structured pre tested interview schedule. The collected data were analyzed by using appropriate statistical tool to infer results.

RESULTS AND DISCUSSION

Results obtained during the course of investigation have been systematically categorized and presented with the relevant discussion under the following sections:

Knowledge of tribal women about improved aonla cultivation and post harvest practices:

Knowledge is one of the essential components of human behaviour which plays an important role in adoption of a technology. Once knowledge is acquired it facilitates to develop favourable attitude to take certain action in accepting an innovation or technology. Hence, in the present investigation, an effort was made to find out knowledge of the tribal women about improved aonla cultivation and post harvest practices and presented in Tables 1 to 5.

Knowledge of the respondents regarding improved cultivation practices:

Perusal of Table 1 reveals that in the component of soil and climate, majority of the respondents (91.00%) knew the type of climate is suitable for aonla cultivation. Sandy loam is most suitable soil for aonla cultivation was known to 74.50 per cent of the respondents. None of the respondents had any knowledge about soil pH. The reason may be that the soil pH is the chemical property of soil and the respondent's illiteracy is the hindering factor regarding the knowledge about soil pH.

The results are in line with the findings of Dubey

Table 1: Distribution of the respondents by their in-depth knowledge regarding aonla cultivation practices (n=200)

Sr. No.	Components	f (%)
1.	Soil and climate	
a	Type of climate (tropical and sub-tropical)	182 (91.00)
b	Type of soil (sandy loam)	149 (74.50)
c	Soil pH (7-9)	00
2.	Improved varieties	
a	Name of recommended variety of aonla (Chakaiya, Hathijhool)	177 (88.50)
b	Advantages of high yielding varieties	163 (81.50)
3.	Propagation	
a	Different methods of plant propagation in aonla	200 (100)
b	Method of budding in aonla	111 (55.50)
c	Time for sowing seed in nursery	185 (92.50)
d	Seed treatment	00
4.	Plantation	
a	Age of transplanted plant	176 (88.00)
b	Length of transplanted plant	173 (86.50)
c	Time of plantation	200 (100)
d	Size of pit for planting aonla	183 (91.50)
e	Appropriate amount of manures and fertilizers for pit filling	199 (99.50)
f	Plant to plant spacing	200 (100)
5.	Irrigation	
a	Time of irrigation (March)	200 (100)
b	Number of irrigation	
	In winter (20-25 days)	200 (100)
	In summer (10-15 days)	200 (100)
c	Interval of irrigation in aonla plant according to their age	200 (100)
d	Method of irrigation (Basin method)	200 (100)
6.	Manure and fertilizer application	
a	Name of manure and fertilizers	
	Farm yard manure	200 (100)
	Urea	200 (100)
	Super phosphate	200 (100)
	Murate of Potash	200 (100)
b	Dose of manures fertilizers	200 (100)
c	Advantages of applying farmyard manure	176 (88.00)
d	Time of application of manures fertilizers	200 (100)
e	Method of application of manure and fertilizer	200 (100)
7.	Training and pruning	
a	Training and pruning necessary for aonla plants	200 (100)
b	Advantages of pruning	159 (79.50)
c	Time of training and pruning in aonla plants (initial years)	200 (100)

Table 1: Contd

Table 1: Contd.....

8.	Plant protection practices	
a	Name of insect-pest	
	Shoot gall maker	28 (14.00)
	Leaf eating caterpillar	96(48.00)
	Bark eating caterpillar	76 (38.00)
	Mealy bug	00
b	Insect-pests control measures	
	Pruning of galled twigs	109 (54.50)
	Spray monocrotophos	34 (17.0)
	Spray cipermehtine to control bark eating caterpillar	57 (28.5)
c	Name of diseases	
	Aonla rust	95 (47.50)
	Fruit rot	141(70.50)
	Internal fruit necrosis	74 (37.00)
d	Symptoms	
	Black spots on leaves, falling of fruits before maturity	178(89.00)
	Patches and bluish green pustules on fruits	167(83.50)
	Fruit darkness internally	138 (69.00)
e	Control measures	
	Spray baliton or chlorothalonil	21(10.50)
	Spraying mancozeb and zincab	13 (6.50)
	spray borax solution	53 (26.50)
f	Quantity of chemical	
	1g / lit. water	129 (64.50)
	2g / lit. water	137(68.50)
	0.06 per cent solution	123 (61.50)
9.	Inter cropping	
a	Crops taken as intercrop in aonla orchard	
	Vegetables	110(55.00)
	Berseem	15(7.50)
	Different types of pulses	75 (37.50)
b	Advantages of intercropping	150 (75.00)
10.	Harvesting	
a	Stage of harvesting (basis of size and maturity of fruits)	200 (100)
b	Time of harvesting (November- January)	200 (100)
c	Method of harvesting of aonla	200 (100)
d	Average harvests from an aonla tree of 8-10 years age	
	Seedling plant 80-90 kg fruits/tree	00
	Grafted or budded plant 160-200 kg fruits/tree	200 (100)
e	Average age of aonla tree with fruit production (45- 50 years)	87 (43.50)

(2013) that majority of the respondents (78%) had knowledge about suitable soil type and approximately 50 per cent respondents were aware about suitable climate for cultivation of *ber*. None of the respondents had knowledge about soil pH.

Data presented in Table1 also indicates that the majority of the respondents (88.50%) knew the name of improved varieties of aonla viz., *Chakaiya* and *Hathijhool*, recommended by the agency (BAIF) working in the study area. The findings are supported by Dubey (2013) who found that more than sixty per cent of the respondents knew the name of improved variety of *ber* viz., *Gola*.

The data further depicts that 81.50 per cent respondents knew about the advantages of improved varieties i.e. high yielding potential, give quality fruits in terms of size and weight and resistant to insect, pest and diseases. Whereas, 18.50 per cent respondents did not have knowledge regarding advantages of improved varieties.

The knowledge assessment of the respondents in various aspects of propagation (Table 1) reveals that all the respondents knew about different methods of propagation in aonla like grafting and budding. Data in the table further show that 55.50 per cent of the respondents had knowledge regarding method budding in aonla i.e. shield budding whereas 44.50 per cent of the respondents did not have knowledge about this thing. Majority of the respondents (92.50%) knew about the recommended time for sowing seeds in nursery. None of the respondents knew about the seed treatment before sowing in nursery (Table 1). The reasons for such findings may be that these practices are very technical in nature and generally performed by the male. Further the budded plants are bought directly from the private nurseries or from the organization (BAIF) by the respondents, so respondents were not having knowledge about these things.

The findings get support of the study by Bhati (2015) that guava is propagated both by seed and vegetative method were known to all the respondents and also reported that vegetative propagation is most suitable for guava.

Data presented in Table 1 regarding plantation indicate that 88.00 per cent of the respondents had knowledge about recommended age of plants for transplanting followed by the length of transplanted plants which was known to 86.50 per cent of the respondents.

All the respondents (100%) knew about suitable time of aonla plantation in orchard *i.e.* July to August. Similarly, 91.50 per cent of the respondents had knowledge regarding recommended pit size for planting aonla. Majority of the respondents (99.50%) knew about the appropriate amount of filling materials in the pits (20-25kg FYM + super phosphate 1 kg + chloropyrophos 50-100 g). All the respondents had knowledge about plant to plant spacing *i.e.* 8 meter. The reason behind this is that the respondents were intensively involved in the activity of plantation and digging pits and preparing filling material for pits either independently or jointly with male or female members of the family.

The results are in conformity with the findings of Dubey (2013) towards ber crop, indicate that 53 per cent of the respondents knew about the recommended age of transplanted plants. The recommended length of transplanted plant (*ber*) was known to 70 per cent respondents. Similarly 62 per cent respondents had knowledge about the recommended time period for plantation of ber. Similarly, 74 per cent respondents knew about the size of pit.

Cursory of Table 1 reveals that all the respondents, possessed knowledge regarding suitable time of irrigation, number of irrigation during summer and winter days and irrigation interval in aonla plant according to their age. Similarly, cent per cent respondents, had knowledge about basin method of irrigation in aonla.

The findings of the study are in consonance with the findings of Bhati (2015) who revealed that 57-62 per cent respondents reported that in winter season an interval of 15-20 days and in summer season 7-10 days irrigation is required in guava cultivation.

Regarding manure and fertilizer application, Table 1 shows that all the respondents possessed knowledge about name of manure and fertilizer *viz.*, farmyard manure, urea, super phosphate and murate of potash. To meet out requirements of nutrients of the fruit crops, it is important to apply recommended dose of manure and fertilizer at appropriate time in the field. Table further shows that all respondents, knew about recommended dose of manure and fertilizer applied in aonla plants followed by 88.00 per cent respondents had knowledge about the advantages of applying farmyard manure in aonla plants *i.e.* it provides all nutrients and improves water holding capacity. Similarly, 100 per cent respondents knew about recommended time of application of manure and fertilizer. Further, all the respondents also had knowledge regarding the method

of application of manure and fertilizer in aonla as a circular ring is made around the tree and manure and fertilizer are put in it. The findings of the table clearly indicate that almost all respondents had knowledge about manure and fertilizer application because all the respondents were members of the SHGs and they are regular in touch with the organization (BAIF) supervisors and village level worker, so, they possessed maximum information regarding manure and fertilizer application.

The findings are in conformity with the findings of Bhati (2015) who revealed that urea and FYM are the manures applied in the guava trees was reported by more than 90 per cent respondents. With regard to the recommended quantity of manures application nearly 50 per cent of the respondents knew about this aspect. However, majority of respondents reported that in guava trees manure and fertilizer should be applied twice in a year *i.e.* in the rainy season from June to July (53.00%) and in winter season during October month (93.00%).

Perusal of Table 1 depicts that all the respondents, had knowledge that training and pruning is necessary for aonla plants followed by 79.50 per cent respondents had knowledge regarding the advantages of pruning in aonla plants that is pruning is essential to remove infected branches and dead woods, prevent insect and pest attack facilitate in spraying and other cultural operations. The respondents had knowledge regarding these aspects due to the reason of their involvement in training and pruning of aonla plants either independently or jointly with male members of the family.

Information pertaining to the knowledge of respondents regarding plant protection practices is presented in Table 1. Data presented in the table clearly reveal that 48.00 per cent of the respondents were having knowledge regarding leaf eating caterpillar in aonla. This might be due to the reason that the respondents might be observing leaf eating caterpillar more so they may be aware of it. Bark eating caterpillar was known to 38.00 per cent of the respondents. Further shoot gall maker another common insect of aonla was known to 14.00 per cent of the respondents. Table 1 further depicts that 54.50 per cent respondents knew that pruning of galled twigs helps to control insect-pest in aonla. However, only 17.00 per cent of the respondents had knowledge about the control measures of leaf eating caterpillar *i.e.* Spray monocrotophos 36 SL 1.5 ml/ltr (83.00%) and spray of cipermethine helps to control bark eating caterpillar was known to 28.50 per cent of the respondents. This may be due to the reason that all the respondents were illiterate

and it is difficult for them to remember scientific names of insecticides and pesticides.

Majority of the respondents (70.50%) knew the name of the disease fruit rot in aonla, whereas 47.50 per cent and 37.00 per cent respondents were having knowledge about aonla rust and internal fruit necrosis. Regarding the symptoms of disease, it was known to 69.00-89.00 per cent respondents because the symptoms can be easily seen such as black spots on fruits, falling fruits before maturity and fruits darkens internally. Regarding diseases control measures table further reveals that 26.50 to 6.50 per cent respondents had knowledge regarding chemicals which are used to control diseases in aonla but about the quantity of chemicals it was known to 61.50-68.50 per cent respondents. This might be due to the reason that all the respondents were illiterate and when they see any kind of symptoms of disease occur in aonla trees, they go to the agency officials to tell their problems and ask about the solution. Agency officials suggest the chemicals according to the symptoms and tell them about the quantity to be used. The respondents are able to remember the quantity, hence have only knowledge of quantity of chemicals sprayed in aonla but not the name of chemicals for particular disease.

The results are in line with the results of Moulasab *et al.* (2006) who observed that respondents had less knowledge about plant protection measures in improved mango cultivation practices.

Regarding intercropping, Table 1 shows that all the respondents had knowledge about the crops taken as intercrop with aonla orchards. Vegetables taken as intercrop was known to 55.00 per cent of the respondents, whereas, 37.50 per cent respondents had knowledge about different types of pulses and 7.50 per cent respondents knew the berseem for intercrop. Findings of the table further indicate that 75.00 per cent of the respondents knew that intercropping facilitates to control weed and earn extra income through growing vegetables and pulses with aonla orchards.

The findings supported by Bhati (2015) who revealed that all respondents possessed knowledge regarding intercropping of different vegetables and pulses crops with the guava orchards.

With regard to harvesting of aonla, data presented in the table reveal that all the respondents knew the suitable time, stage and method of harvesting aonla fruits. Regarding average harvest from an aonla tree of 8-10 years age, all the respondents knew the average yield

i.e. 160-200 kg fruits/tree from grafted or budded plants. A well maintained aonla tree yields upto an age of 45-50 years was known to 56.50 per cent of the respondents whereas 43.50 per cent of the respondents did not had knowledge about this aspect.

The findings are in line with the findings of Bhati (2015) that all the respondents knew the most suitable period of harvesting of guava fruits as August- September month in rainy season, November-December in winter and March-April in spring season and when fruits are yellow in color they are ready for harvesting. Regarding average yield (60-70 kg/ plant) of guava was known to 52 per cent of the respondents.

Knowledge of the respondents regarding improved post harvest practices:

Knowledge of the respondents about improved post harvest practices of aonla was assessed and presented in Table 2.

Perusal of Table 2 indicates that all the respondents had knowledge about the shelf life of aonla fruits and its storage like fresh harvested fruits are spread in a layer and stored at room temperature.

Table 2: Distribution of the respondents by their knowledge regarding post harvest practices of aonla (n=200)

Sr. No.	Components	f (%)
1	Shelf life of aonla fruits (5-7 days)	200 (100)
2	Grading of aonla	
a	On the basis of size	122 (61.00)
b	On the basis of colour	00
c	On the basis of quality (spots, separation of rotten fruits)	78 (39.00)
3	Storage of aonla fruits	200 (100)
4	Packaging of aonla fruits	
a	Gunny bags	110 (55.00)
b	Basket of pigeon pea stem	16 (8.00)
c	Plastic carats with newspaper lining	38 (19.00)
5	Products made from aonla	
a	Aonla pickle	119 (59.50)
b	Dried aonla	109 (54.50)
c	Aonla candy	125 (62.50)
d	Squash	00 (0.00)
e	Murabba	85 (42.50)
f	Aonla powder	104 (52.00)
g	Aonla supari	72 (36.00)
h	Aonla juice	25 (12.50)
i	Chutney	58 (29.00)

Grading could be done on the basis of size and quality of aonla fruits (spots and separation of rotten fruits) was known to 61.00 and 39.00 per cent of the respondents, respectively.

With regard to packaging of aonla fruits, 55.00 per cent respondents had knowledge that gunny bags are use for packaging whereas, only 8.00 to 19.00 per cent respondents knew that basket of pigeon pea stem and plastic crates with newspaper lining are also use for packaging of aonla fruits.

A number of processed products can be made from aonla fruits, *pickle, dried aonla, aonla candy, aonla powder* and *murabba* was known to 62.50 - 42.50 per cent respondents whereas, 12.50 to 36.00 per cent respondents had knowledge that *aonla juice, chutney* and *aonla supari* are also made from aonla fruits. It was also found that none of the respondents knew about *aonla squash*. This was due to the reason that this product was not popular in the area.

Component wise knowledge possessed by the respondents :

Knowledge regarding improved cultivation practices:

Component wise knowledge of the respondents was assessed and the extent of knowledge possessed by the respondents in different components related to cultivation practices of aonla is presented in three categories good, average and poor along with mean per cent score in Table 3.

A look over Table 3 reveals that the respondents were having good knowledge in four components *viz.* plantation, irrigation, manure and fertilizer application and training and pruning as depicted by MPS ranges between 75.00 – 83.36. However, in rest of the components *i.e.*

soil and climate, improved varieties, propagation, plant protection measures, intercropping and harvesting respondents possessed average knowledge with MPS ranging between 49.16 – 63.87.

In detailed review it is clearly apparent from the table that in the components like plantation, irrigation, manure and fertilizer application and training and pruning, majority of the respondents were found under the good category of knowledge with MPS 86.36, 99.00, 85.89 and 75.00, respectively.

In the component of improved varieties average knowledge was possessed by the respondents as depicted by MPS 63.87. It is also reflected in the distribution of the respondents as majority of the respondents (63.00%) fall under the average knowledge category followed by high knowledge category 23.50 per cent of the respondents.

The average knowledge was possessed by the respondents in the component harvesting with MPS 63.35. Distribution of respondents in this component revealed that 56.50 per cent of the respondents were having average knowledge and 43.50 per cent of the respondents were having good knowledge category.

Respondents also possessed average knowledge in the component of soil and climate with MPS 55.67 and it is also evident from the distribution of the respondents that majority of the respondents (67.00%) were in average knowledge category followed by 32.00 per cent of the respondents also in poor knowledge category leading to lower MPS (Table 3).

Table 3 further depicts that in the component plant protection practices, average knowledge possessed by the respondents as depicted by MPS 52.00. It is also evident in the categorization of the respondents which

Sr. No.	Components	Knowledge			MPS
		Good f (%)	Average f (%)	Poor f (%)	
1.	Soil and climate	2 (1.00)	134 (67.00)	64 (32.00)	55.67
2.	Improved varieties	47 (23.5)	126 (63.00)	27 (13.50)	63.87
3.	Propagation	0	182 (91.00)	18 (9.00)	49.16
4.	Plantation	185 (92.50)	15 (7.50)	0	86.36
5.	Irrigation	200 (100)	0	0	99.00
6.	Manure and fertilizer application	188 (94.00)	12 (6.00)	0	85.89
7.	Training and pruning	159 (79.50)	41 (20.50)	0	75.00
8.	Plant protection practices	38 (19.00)	138 (69.00)	24 (12.00)	52.00
9.	Intercropping	56 (28.00)	81 (40.50)	6 (3.50)	49.62
10.	Harvesting	87 (43.50)	113 (56.50)	0	63.35

shows that 69.00 per cent of the respondents were found in average knowledge category followed by 19.00 per cent and 12.00 per cent respondents were in good and poor knowledge category.

Regarding intercropping component, respondents possessed average knowledge with 49.62 MPS. The distribution of the respondents also showed that 40.50 per cent of the respondents were found in average knowledge category followed by poor knowledge category (31.50%) and 28.00 per cent of the respondents were in high knowledge category. Average knowledge was possessed by the respondents in propagation component as depicted by 49.16 MPS. It is also reflected in the distribution of the respondents, as 91.00 per cent of the respondents were found in average knowledge category.

Similar results were reported by Bhati (2015) that the knowledge of the respondents about plant propagation and intercropping in guava cultivation was found to be good with 100 MPS. Study further revealed that in the components of harvesting, land preparation and pit digging and improved variety of guava as indicated by its mean per cent score *i.e.* 86.33, 78.36 and 78, respectively was also found under the good knowledge category followed by irrigation management and agro climate and soil with the mean per cent scores ranging from 68.83- 75.2 also indicating good knowledge of the respondents.

Knowledge regarding improved post harvest practices:

Knowledge of the respondents about improved post harvest practices of aonla was assessed under five components *viz.*, shelf life of aonla fruits, grading of aonla

fruits, storage method, ways of packaging and processed products of aonla.

Perusal of Table 4 depicts that per cent respondents possessed good knowledge in two components shelf life of aonla fruits and storage method of aonla fruits with MPS 100.

In components namely grading of aonla fruits, processed products of aonla and ways of packaging, respondents possessed average knowledge as depicted by MPS ranges from 56.66 to 62.50.

Overall knowledge possessed by the respondents:

Overall knowledge of respondents regarding improved aonla cultivation and post harvest practices is presented in Table 5. In improved cultivation practices data presented in the table depict that respondents possessed average knowledge with overall MPS 64.87. It is clearly apparent from the table that majority of the respondents (69.50%) were in the category of average knowledge followed by 24.00 per cent of the respondents were in good knowledge category and only 6.50 per cent of the respondents were in poor knowledge category regarding improved aonla cultivation practices.

Knowledge assessment of the respondents regarding improved post harvest practices depicts that they possessed average knowledge about post harvest practices with overall MPS 55.46. Categorization of the respondents in various knowledge categories highlights that majority of them (79.00%) were found in average knowledge category followed by 12.50 per cent of the respondents were in good knowledge category and only 8.50 per cent of the respondents were in poor knowledge category (Table 5).

Table 4: Distribution of the respondents by their component-wise knowledge regarding post harvest practices of aonla (n=200)

Sr. No.	Components	Extent of knowledge			MPS
		Good f (%)	Average f (%)	Poor f (%)	
1.	Shelf life of aonla fruits	200 (100)	0	0	100
2.	Grading of aonla fruits	54 (27.00)	112 (56.00)	34 (17.00)	56.66
3.	Storage method of aonla fruits	200 (100)	0	0	100
4.	Ways of packaging	35 (17.50)	119(59.50)	46 (23.00)	62.50
5.	Processed products of aonla	25 (12.50)	104 (52.00)	71 (35.50)	56.70

Table 5: Distribution of the respondents by their overall knowledge regarding improved aonla cultivation and post harvest practices (n=200)

Sr. No.	Component	Extent of knowledge			MPS
		Good	Average	Poor	
1.	Cultivation	48 (24.00)	139 (69.50)	13 (6.50)	64.87
2.	Post harvest	25 (12.50)	158 (79.00)	17 (8.50)	55.46

The results of the present study are in consonance with the study of Choudhary and Punjabi (2012) that 67.50 per cent of the respondents fall in high level of knowledge group whereas, 25.00 per cent growers were observed in the medium level of knowledge group and remaining 7.50 per cent respondents possessed low level of knowledge about coriander production technology.

The findings of Gavade *et al.* (2013) reported that majority of the respondents (89.00%) were in the category of high knowledge, whereas very few (11.00%) were in the category of medium knowledge and none of them were found in low knowledge category regarding grape cultivation practices.

Conclusion:

Overall it could be concluded that all the respondents possessed average to good knowledge regarding improved cultivation and post harvest practices of aonla. The plausible reason may be that all the respondents are the members of the SHGs of organization (BAIF) and getting information regarding cultivation and post harvest practices of aonla through local leaders, village level worker, organizational functionaries, neighbours and relatives. Another possible reason may be that all the respondents involved in improved cultivation and post harvest practices of aonla either independently or jointly with male or female members of the family so, they possessed good knowledge.

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