

Organic Dairy Farming Prospects and Limitations- An Awareness Study

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ABSTRACT

Organic farming though not new to India, farmers need to have clear understanding about the concept of organic farming in the present context in order to optimise resources, adopt eco friendly and sustainable production methods and achieve higher returns on long term. Organic production is progressively coming from farmers' movement and consumers' choice which cannot be ignored. Majority of the farmers have marginal, small and semi-medium operational holdings i.e (87.70 %) of the livestock and the low external inputs based Indian dairy sector has better prospects to transform to organic production if focused and well directed approach is made by Government of India to support organic farmers to include dairying as it is an integral part of their farming activity. In this context, study was conducted on knowledge of farmers on organic dairying prospects, which indicated that (63.33 %) were aware that 'integration of crop and livestock will decrease the production cost as inputs can be derived easily', (62.50 %) were aware about 'organically grown food taste better', (60.00 %) 'more nutritious'. Awareness on limitations of Organic Dairy Farming (ODF) stated that majority (80.83 %) of the respondents were aware about 'certification of organic farm is primarily based on documentation and most of the farmers are illiterates' and (71.67 %) of the respondents were aware about 'lack of government support for organic market development'.

Key words: Awareness; Organic dairy farming; Prospects;

India has a strong traditional farming system with innovative farmers, vast drylands and least use of chemicals in fact the rain-fed tribal north-east and the hilly regions of the country where negligible chemicals are used and practiced subsistence agriculture for a long period, such areas are organic by default. India ranks 33rd in terms of total land under organic cultivation. In India 12,07,000 Ha of land is under organic management (*National Centre of Organic Farming, 2008-09*).

Andhra Pradesh has 7377.98 ha of area under organic certification and 25072.544 ha of land under conversion, while 5586 are registered organic farmers and 28599 under conversion (*National Centre of Organic Farming, 2008-09*).

The Indian consumer is becoming more and more conscious about their health, The affinity of an individual

towards consumption of organic food items is highly dependent on the awareness levels, spending capacity and accessibility to the individual, the health benefit they expect from the organic food stem from the fact that organic products do not contain harmful chemicals or pesticides and are grown in hygienic conditions.

Modern crop farming has enhanced the food grain production but it has caused many problems to the environment and human health. A natural balance needs to be maintained for sustainability of production system. Therefore recycling of resources through organic farming approach is of paramount importance.

Livestock is an integral part of agriculture and has profound influence on sustainability, as India has excellent breeds of cattle and buffaloes having natural resistance against diseases and well adapted to climate.

Organic dairy farming means raising animals on organic feed (i.e. pastures cultivated without the use of fertilizers or pesticides), have access to pasture or outside, along with the restricted usage of antibiotics and hormones. This study using National Program on Organic Production (NPOP) standards of India has included the targeted sample of organic producers, to examine their knowledge levels on organic dairy farming.

METHODOLOGY

The study was taken up in Medak District of Telangana State, where an internationally known NGO called Deccan Development Society (DDS) is located which promotes organic farming and certifies farmers under Participatory Guarantee Scheme. Zaheerabad, Jharasangam and Siddipet are the three mandals selected as farmers already following organic farming and has got sensitization about organic dairy farming. From each mandal four villages were selected, 10 farmers from each village were selected thus a total sample of 120 dairy farmers were selected by multi stage random sampling method.

A pre-tested interview schedule was developed and used for measurement of awareness about prospects and limitations of organic dairy farming. The Interview schedule covered the investigation under various subheads like health and nutrition, marketing, certification and production. For the purpose of quantification the responses were categorized as aware and unaware with a weightage of 2 and 1 scores respectively and was coded, tabulated and subjected to statistical analysis. The results were weight out in terms of frequency and percentage.

RESULTS AND DISCUSSION

Awareness about Prospects of Organic Dairy Farming:

Health and Nutrition: From the Table 1, it is evident that respondents were aware that organically grown foods taste better (62.50%) & are more nutritious (60.00%). These findings were in line with *Butler et al. (2011)*, *Palupi et al. (2012)*. (54.16%) of respondents were aware that Organic milk contains no chemical residues of fertilizers and medicines and consumers prefer organic milk as it promotes immunity. Similar findings were brought out by *Crinnion (2010)*. 45.00 per cent respondents were aware that ‘increasing

awareness and health consciousness among consumers’ and ‘high income consumers were willing to pay more for safe foods/organic foods’ findings is in line with *Argyropoulos et al. (2013)*. 58.33 per cent had awareness that ‘organically grown foods are preferred as they have bright shining color’ and ‘better keeping quality than non-organic foods’ was reported by (55.83%) of respondents.

The reason for the above results were the dairy farmers of the study area belonged to middle age, tasted organically grown food produce and milk as well as inorganically grown produce and they might have heard from their elders that old generations were stronger than present generation. The results of the present investigation correspond with that of *Thippeswamy (2013)* and *Shafie and Rennie (2012)*.

Marketing: The results, revealed that (48.33%) respondents were aware of ‘increasing demand for milk and milk products’, whereas 18.33 per cent were aware that organically certified dairy produce ensures International Exchange by exporting the products to other countries, 17.50 per cent were aware of ‘wide market scope for organic dairy products’ and 11.67 per cent were aware of ‘Organic Dairy Farming fetches premium price for produce’. The results might be due to their vast experience in dairy farming, during which they had closely observed market trend for milk and milk products and awareness created on organic market by Deccan Development Society (DDS) in particular. The above findings got support from *Mahesh (2013)*, *Shafie and Rennie (2012)* and *Ramesh et al. (2010)*. *Certification:* The findings of the study inferred that 11.67 per cent of the respondents were aware that recognition of Indian Organic Standards and certification system by EU and USA provides a vast potential for export to these countries. This is in line with finding of *Mahesh (2013)*.

Production: Majority (63.33%) of the respondents were aware that ‘integrating organic crop and livestock the production cost can be decreased as the organic inputs can be derived easily’ followed by 49.17 per cent of respondents were aware about ‘Organic Dairy Farming is a holistic approach which optimally utilizes locally available resources’ 46.67 per cent were aware that ‘farm yard manure is the best way to rejuvenate and fertilize the soil’ where as 43.33 per cent were aware that ‘profit is higher in Organic Dairy Products than

Table 1: Awareness of respondents on prospects of organic dairy farming (N=120)

Statements	Aware No. (%)	Unaware No. (%)
<i>Health and Nutrition</i>		
Organic milk contains no chemical residues of fertilizers and medicines.	65(54.16)	55 (45.83)
Consumers prefer organic milk as it promotes immunity.	65(54.16)	55 (45.83)
Increasing awareness and health consciousness among consumers.	54(45.00)	66(55.00)
High income consumers are willing to pay more for safe foods/organic foods.	54(45.00)	66(55.00)
Organically grown food taste better.	75(62.50)	45(37.50)
Organically grown food is more nutritious.	72(60.00)	48(40.00)
Organically grown foods are preferred as they have bright shining color.	70(58.33)	50(41.67)
Organic food is preferred as they have better keeping quality than Non-Organic foods.	67(55.83)	53(44.17)
<i>Marketing</i>		
Organic Dairy Farming fetches premium price for produce.	14(11.67)	106(88.33)
Organically certified Dairy produce ensures International Exchange by exporting the products to other countries.	22(18.33)	98(81.67)
Increasing demand for milk and milk products.	58(48.33)	62(51.67)
Wide market scope for organic dairy products.	21(17.50)	99(82.5)
<i>Certification</i>		
Recognition of Indian Organic Standards and certification system by EU and USA provides a vast potential for export to these countries.	14(11.67)	106(88.33)
<i>Production</i>		
On integrating organic crop and livestock the production cost can be decreased as the organic inputs can be derived easily.	76(63.33)	44(36.67)
Farm yard manure is the best way to rejuvenate and fertilize the soil.	56(46.67)	64(53.33)
Profit is higher in Organic Dairy Products than Non-Organic Dairy Products.	52(43.33)	68(56.67)
ODF is a holistic approach which optimally utilizes locally available resources.	59(49.17)	61(50.83)

Non-Organic Dairy Products'. The reason for above result was that majority of the dairy farmers in the study area integrated their crop and dairy enterprises, so they know that crop and dairy enterprises complement each other. The findings were largely in agreement with *Ramesh et al. (2010)*, *Gill et al. (2009)* and *Subrahmanyeswari and Chander (2008a)*.

Awareness about limitation on organic dairy farming:

Health and Nutrition: The results from the Table 2, revealed that, the majority (51.67%) of the respondents were aware that non-usage of medicines leads to increased incidence of diseases and 36.67 per cent of respondents were aware that on using organic foods, no significant evidence on health benefits was observed. The above results might be due to the reason that the farmers might have experienced health problems and also due to unavailability of scientific documents on health benefits from the organic dairy products. The findings were in agreement with *Forman and Silverstein (2012)*.

Marketing: It is evident that 71.67 per cent of respondents were aware that they 'lack Government

support for Organic Dairy market development' & 52.50 per cent of respondents were aware that 'In Organic Dairy Farming maintenance cost per cow is more'. Further, 53.33 per cent 'marketing and distribution chain for organic products is relatively inefficient', 35.00 per cent 'government agencies have inadequate information on market and regulatory requirements'. The above results were due to lack of government efforts in developing market for organic produce. These findings are in line with *Argyropoulos et al, (2013)*, *Berentsen et al. (2012)*, *Patil (2008)* and *Pathak (2002)*. The results also brought out that 21.67 per cent of the respondents had awareness on 'organic foods are costlier so poor cannot afford to purchase them', these findings were in agreement with *Boulay (2010)* and *Laepple and Donnellan (2008)*.

Certification: From the Table 2, it was stated that majority 80.83 per cent of respondents were aware that 'certification of organic farm is primarily based on documentation, while most small farmers are illiterate'. This may be due to fact that most of the respondents belonged to small and marginal category and illiterates,

Table 2: Awareness of respondents on limitations of organic dairy farming (N=120)

Statements	Aware No. (%)	Unaware No. (%)
<i>Health and Nutrition</i>		
Non-usage of medicines leads to increased incidence of diseases.	62(51.67)	58(48.33)
On using organic foods no significant evidence on health benefits was observed.	44(36.67)	76(63.33)
<i>Marketing</i>		
Organic foods are costlier so poor cannot afford to purchase them.	26(21.67)	94(78.33)
Marketing and distribution chain for organic products is relatively inefficient.	64(53.33)	56(46.67)
Maintenance cost per cow is more in Organic Dairy Farming.	63(52.50)	57(47.50)
Government agencies have inadequate information on market and regulatory requirements.	42(35.00)	78(65.00)
Lack of Government support for OD market development.	86(71.67)	34(28.33)
<i>Certification</i>		
Absence of subsidies during conversion and for organic inputs.	41(34.17)	79(65.83)
Certification of organic farm is primarily based on documentation, while most of the small farmers are illiterate.	97(80.83)	23(19.17)
<i>Production</i>		
ODF might not meet the demands of the world as the yield is low.	30(25.00)	90(75.00)

*values in the parentheses indicate percentages.

while most of the literature on organic farming is available in English, through print medium and the internet. The above findings got support from *Chander et al. (2011)*, *Patil (2008)*, *Pathak (2002)*. The results also confirmed that 34.17 per cent 'absence of subsidies during conversion and for organic inputs', this was in line with the finding of *Patil (2008)*.

Production: From the Table 2, it was evident that one fourth 25.00 per cent of the respondents were aware that 'ODF cannot feed the world as the yield is low' this was in line with the finding of *Paul and Rana (2012)*.

CONCLUSION

Farmers are not aware that the most of the dairy farming practices they are following are organic in nature. Predominantly the dairy animals were rearing

traditionally/ naturally which is 70% organic. This study brought out that the dairy farmers awareness levels were moderate to low on advantages and limitations of organic dairy farming. Integrating organic crop and livestock the production cost otherwise more can be decreased as the inputs can be derived easily from the farm itself. Dairy consumer's awareness on health consciousness can be taken as an advantage through Organic Dairy Farming. Majority of the dairy farmers were illiterate and organic certification is primarily based on documentation, marketing and distribution chain for organic dairy products are not sufficient, maintenance cost per cow is also more in ODF so lot of efforts required to put in to create awareness amongst dairy farmers to fetch maximum advantages of ODF while minimising limitations.

REFERENCES

- Argyropoulos, C., Maria, A., Tsiadouli., Stefanos, P., Sgardelis and Pantis J.D. (2013). Organic farming without organic products, *Land Use Policy*, **32**: 324–328.
- Berentsen, P.B., Kovacs, K. and Asseldonk, M.A.V. (2012). Comparing risk in conventional and organic dairy farming in the Netherlands: an empirical analysis, *Journal of dairy science*, **95**:3803–3811.
- Boulay, A. (2010). Organic Farming: A Solution to Agriculture Crisis Or A "New" Trend To Healthy Eating? An Overview of French And British Farmers, *Journal for Geography*, **5**(1): 125-134
- Butler, G., Stergiadis, S., Seal, C., Eyre, M. and Leifert, C. (2011). Fat composition of organic and conventional retail milk in northeast England, *Journal of Dairy Science*, **94** (1): 24–36.
- Chander, M., Subrahmanyeswari, B., Mukherjee, R. and Kumar, S. (2011). Organic livestock production: an emerging opportunity with new challenges for producers in tropical countries, *Rev. sci. tech. Off. Int. Epiz*, 2011, **30**(3): 969-983.

- Crinnion, W.J. (2010). Organic foods contain higher levels of certain nutrients, lower levels of pesticides, and may provide health benefits for the consumer. *Alternative Medicine Review*, **15**(1): 4-12.
- Department Of Animal Husbandry, Dairying & Fisheries, Annual Report 2012-13, Ministry of Agriculture, Government of India.
- Forman, J. and Silverstein, J. (2012). Organic foods: health and environmental advantages and disadvantages. *Pediatrics*, **130**: 1406.
- Gill M.S., Singh J.P. and Gangwar, K.S. (2009). Integrated farming system and agriculture sustainability, *Indian Journal of Agronomy*, **54**(2): 128-139.
- Laepplé, D. and Donnellan, T. (2008). Farmer attitudes towards converting to organic farming, National organic conference 2008, available at: <http://orgprints.org/18660/1/D.LappleConfpaper08.pdf>.
- Lokhande, J.P., Jha, S.K. and Vaidya, M.D. (2012). Constraints perceived by the dairy farmers in adoption of scientific dairy farming practices, *Journal of Dairying, Foods and Home Sciences*, **31**(1): 42-46.
- Mahesh, M.S. (2013). Integrated Organic Farming and Organic Milk Production: Opportunities and Challenges in India, *Indian Dairyman*, **65** (5): 56-60.
- National Centre of Organic Farming, Department of Agriculture and Cooperation, Ministry of Agriculture, Government of India, available at: ncof.dacnet.nic.in.
- National Centre of Organic Farming, Training Manual Certification and Inspection Systems in Organic Farming in India, Compiled by Dr. A.K. Yadav, Government of India, Ministry of Agriculture, Department of Agriculture and Cooperation.
- National Programme on Organic Production (NPOP) (2005). Department of Commerce, Ministry of Commerce and Industry, 6th Edition. May 2005.
- Nemes, N. (2009). Comparative Analysis of Organic and Non-Organic Farming Systems: A Critical Assessment of Farm Profitability, Natural Resources Management and Environment Department, Food and Agriculture Organization of the United Nations, Rome, June 2009.
- Odhong, C., Wahome, R.G., Vaarst, M., Kiggundu, M., Nalubwama, S., Halberg, N. and Githigia, S. (2014). Challenges of conversion to organic dairy production and prospects of future development in integrated smallholder farms in Kenya, *Livestock Research for Rural Development*, **26** (7).
- Organic Food Market in India 2012-2016, (2012). Organic Trade Association, Archived at: <http://www.prnewswire.com/news-releases>.
- Oruganti, M. (2011). Organic Dairy Farming – A New Trend in Dairy Sector, *Veterinary World*, **4** (3): 128-130.
- Palupi, E., Jayanegara, A., Ploeger, A. and Kahl, J. (2012). Comparison of nutritional quality between conventional and organic dairy products: a meta-analysis, *Society of Chemical Industry*, **92**(14): 2774-81.
- Pathak, P.K. and Chander, M. (2002). Farmers' Existing Livestock Production Practices In Relation To Organic Production Standards: An Indian Study* 'National Workshop On Organic Animal Husbandry Standards', IVRI, Izatnagar, 26-27 November, 2002.
- Patil, M. (2008). A Study on production and marketing management behaviour of organic vegetable growers in Belgaum District. M.Sc (Agricultural Extension Education) Thesis, University of Agricultural Sciences, Dharwad.
- Paul, J. and Rana, J. (2012). Consumer behavior and purchase intention for organic food, *Journal of Consumer Marketing*, **29**(6): 412-422.
- Ramesh, P., Panwar, N.R., Singh, A.B., Ramana, S., Yadav, S.K., Shrivastava, R. and Rao, A.S. (2010). Status of organic farming in India, *Current Science*, **98** (9, 10).
- Savitha, B. (2009). Organic farming in Andhra Pradesh: Potentials and constraints- A stakeholder analysis. Ph. D Thesis, Acharya N.G Ranga Agricultural University.
- Shafie, F.A. and Rennie, D. (2012). Consumer Perceptions towards Organic Food safety, *Procedia - Social and Behavioral Sciences* **49**: 360 – 367.
- Subrahmanyeswari, B. and Chander, M. (2008a). Livestock Production Practices of Registered Organic Farmers in Uttarakhand State of India. 16th IFOAM Organic World Congress, Modena, Italy, June 16-20, 2008.
- Thippeswamy, E. (2013). Comparative Analysis of Organic and Inorganic Food, *Journal of Agriculture and Veterinary Science*, **4**(6): 53-57.