

Assessment of Farm Animal Welfare using Organic Animal Husbandry Standards as Yardstick: A micro-level study in India*

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ABSTRACT : Animal welfare has attracted widespread attention worldwide in recent times including within the conventional systems of intensive production in industrialized countries. It can be assessed in a number of ways, also, the yardstick of welfare may differ from people to people and region to region since OIE is only now considering development of more science based internationally acceptable criteria for animal welfare . In this study, the organic livestock production standards, developed inter alia, the Government of India (GOI) under its National Programme for Organic Production (NPOP), were used to assess the practices being followed at farmers' level in India. Organic production standards are supposed to keep animal welfare as one of the top most requirements with no compromise on welfare issues. A micro-level study was conducted in Bankura district((22038'N - 23038'N and 86036'E - 87046'E) in India with 50 tribal and 50 non- tribal farmers practicing mixed crop-livestock farming. The farmers (Average landholding 1.02ha, Av. Herd size 4.02 cattle equivalent), were asked about several animal welfare criteria including those for draft animals. It was found that almost all the farmers, either, tribal or non-tribal provide shelter to animals against extreme weather conditions. 90 percent of the farmers provided immediate treatment to sick animals and none of the farmers used sick animals at work. However, 26.46 percent of non tribals beat their animals at work. 9.85 percent farmers confessed that they sometimes overlaod their animals. The average duration of work in summer, rainy season and winter was found 5.27 hrs, 7.09 hrs and 5 hrs, respectively. In the study, it was found that the welfare standards were well cared of though the farmers were not organic per se, nor they have had any specific training or programme on animal welfare measures. It is recommended that the organic animal standards may be used as yardstick to measure animal welfare even in conventional non-organic forms of livestock production systems as is demonstrated in the current study.

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INTRODUCTION

With rising awareness and consciousness on environmental, ethical and welfare issues, consumers now expect their food to be produced and processed with greater respect for the environmental safety and welfare of the animals, especially in developed countries such concerns are being pursued with increasing significance. In developing countries like India too, the consumers are increasingly looking for quality in food products, for example, milk (Chander, 2001). As such, food quality is determined not only by the nature of the end product but also by the welfare status of the animals with or through which the food was produced. Animals are fundamental to organic production since animals inter alia help produce organic manure on-farm which is very important for sustainable organic production. Whereas, in organic production systems, animal health, well-being and their welfare is of supreme importance. Animal welfare, though easy to talk but considerably difficult to define and measure objectively on-farm. In absence of valid, reliable, feasible and universally applicable tool for measuring animal welfare, it has remained a subjective parameter often leading to disagreements by different interest groups. Therefore, there is increasing demand for scientifically-based on-farm welfare assessment systems.

The OIE (the world organization for animal health) has taken initiatives towards preparation of internationally applicable guiding principles and standards for animal welfare. The OIE is committed to ensure that its standards are science based. The taskforce recently set up by OIE is expected to develop the science based standards for animal welfare to be applicable for all kinds of animal production systems. Nevertheless, organic standards developed by various organizations viz. IFOAM, Soil Association (UK), EU, including by the developing countries like India have comprehensive set of animal welfare measures to be followed strictly in order to qualify products as organic. The organic production systems are expected to follow rigid regime of standards towards ensuring high quality of products. Animals are to be kept in natural environment as much as possible allowing them to express their innate behavior. Therefore, in this study, the organic livestock production standards, developed inter alia, the Government of India under its National Programme for Organic Production (NPOP, 2000), were used to assess the practices being followed at farmers' level in India with respect to among others, the draft animals.

Organic animal production standards are supposed to keep animal welfare as one of the major requirements with no compromise on welfare issues. Under organic production systems, not only the cruelty against animals is eliminated but also animals are allowed maximum freedom to express their natural behavior. The conventional production systems too are now emphasizing strict welfare measures to be taken. Keeping this in view, a study (Pathak, 2002) was undertaken basically to see how deviant are the farmers' livestock production practices vis a vis organic production standards which included among others animal welfare measures, since most of the organic standards are directed towards attainment of highest standards of animal welfare.

Materials and Methods

A field survey of 100 randomly selected farmers (50 tribal and 50 non tribal farmers drawn from 4 villages) was carried out during 2001-2002 in Bankura district of West Bengal state in India (22038'N - 23038'N and 86036'E - 87046'E). The farmers were mostly small and marginal farmers (<2 ha of land) following crop livestock mixed farming systems. An interview schedule was developed in congruence with the organic animal husbandry standards developed by GOI which are more or less similar with IFOAM international organic production standards. The farmers were interviewed on their farms about the practices they follow. The researcher's observations with respect to organic production standards were also recorded. The aim was to find out the deviations in practices followed by the farmers with that of the prescribed standards. An arbitrary method of scaling was followed to quantify the deviations in production practices.

To quantify the organic animal husbandry practices followed by the respondents, the overall response regarding each practice was put on a 3 point continuum. Practices which closely follow organic standards (within 20% limit) graded with 2 points, practices which were opposite to the prescribed standards (within 20% limit) graded with 0 point, practices in between these two were graded with 1 point. As for example -

According to Indian organic standards, reproduction technique has to be natural service not A.I. (now AI is allowed after harmonization efforts at international level, since AI was permitted under EU regulations)

So, if 80-100 percent farmers follow natural service, grade point will be 2,
If, 21-79 percent farmers follow natural service grade point will be 1 and, if, 0-20 percent farmers follow natural service grade point will be 0,
As such, overall score for all practices was calculated and presented in terms of percentage of the maximum possible score.
Maximum possible score = Number of practices compared x 2

RESULTS & DISCUSSION

Farmers were asked about 30 organic practices including those relating to draft animals. The responses were collected and tabulated. The comparison of prescribed standards and practices followed by the farmers are given in the Table-1.

The table-1 shows that the practices of Indian farmers in terms of organic standards fetched 45 points. Whereas, the maximum possible point could be 60, when all compared practices are perfectly organic. So, in terms of percentage, the practices of livestock owners of study area were 75 percent ($45/60 \times 100 = 75$) organic. Ironically, even with 75 percent of organic practices followed, the farmers of study area would not qualify as organic livestock producers since, some of the important principles of organic livestock production were not taken care of. As for example, feeding. Though most of the farmers (61%) fed their animals adequately but the source of feed was not organic in any case. This is the single most important factor which alone can disqualify the farmer's claim to be called 'organic'. Moreover, no farmer cultivated fodder crops

and the animals mainly thrived on crop residues, which were not free from chemical fertilizers and/or chemical pesticides as the farmers used these in their crop fields. Similarly, the stocking rates in the study area are fairly high (3.99 cattle equivalent per hectare) in comparison to EU regulation 1804/1999, which is 170 kg/ha (Schmid, 2000).

According to the standards of organic livestock production, keeping of farm records is a must. Though the memory of Indian farmers in respect of inputs used and outputs obtained is quite amazing but they significantly failed to keep written records and none of them were used to keep any farm records. The farming practices, particularly the livestock farming is not yet looked as an industry by majority of Indian farmers, so they do not find any use of keeping records. Low level of literacy could be another factor for not maintaining the written records. Moreover, organic as an emerging system of production has not yet percolated down well to the level of Indian small and marginal farmers in many regions which is evident from the very low level of awareness on this aspect found in surveys at grassroots level (Pathak and Chander, 2001).

According to organic standards, draft animals must be well cared for and must be used in humane manner that causes least possible stress and suffering. As such, there should be some minimum and maximum age, with good health and no overloading and over work. The farmers were queried on the use of draft animals. The table- 2 shows that 71 percent farmers had draft animals with no significant variations between two categories (tribal and non-tribal) of farmers. 26.76 percent farmers who had draft animals beat their animals at work. In most of cases beating was done by a wooden stick. They just beat the animals to direct the movement of animals at work or to show fear to animals for better efficiency. 9.85 percent farmers confessed that they often overload their draft animals during urgent need but no farmers used sick animals at work. There was no difference between tribal and non tribal farmers with respect to these criteria.

With regard to average duration of work, the farmers used their animals for longer time in rainy season (7.09 ± 0.09 hrs). Rainy season is the cultivation time for paddy as the area was rainfed so farmers invariably use the draft animals for longer time to finish the work as early as possible. During summer, the farmers generally used their animals in early morning or afternoon, thus, saving animals from excessive heat. As such, most of the farmers treated their draft animals in humane ways. Very small number of farmers beat them during work or overload them. The average time of work was also not so high. Thus, Indian farmers were well within the standards as far as following the welfare measures was concerned yet not qualified to be considered as organic farmers since they did not follow some of the very fundamental standards like keeping written record of farm production, adequate feeding of green fodder etc.

The objective measurement of animal welfare has remained an area of concern and considerable interest, thus, ways and means to develop objective assessment tool for the measurement of animal welfare even in conventional farm are increasingly being explored. It is argued and proved here to some extent that the standards developed for organic production may be used as valid and reliable tool since exhaustive and intensive exercises are involved in the development of these standards. These standards also leave scope for further modifications and improvement based on research and fields experiences.

CONCLUSION & IMPLICATIONS

Animal welfare is very important consideration in organic farming but internationally accepted, applicable and feasible science- based valid and reliable tool to measure animal welfare are not yet available. The OIE is working on this aspect through a task force set up very recently. Whereas, Organic standards can be used as a tool to measure the welfare of animals since the animal welfare is the very fundamental to organic livestock production and high priority is attached to it under organic systems of animal production. The organic standards are internationally acceptable mainly due to the systematic exercise followed in development of standards including the harmonization efforts. In this study, an attempt was made to measure animal welfare using organic standards developed by Government of India which are at par among others with IFOAM international organic standards. The animal welfare activists, institutions including OIE may consider using organic standards to measure animal welfare even in conventional or non-organic systems of production as has been demonstrated in this study. Also, the contentious issues related to organic animal standards in different countries may be addressed through harmonization efforts, workshops, regional consultations of stakeholders for consensus on such matters (Chander, 2004).

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Table 1 : Comparison of Farmers' practices with organic animal husbandry standards.

Sl.No.	Practices	What standards say	What farmers followed	Score obtained
1	Land holding	Landless animal husbandry not allowed	97% farmers had land with an average of 1.02±0.08 ha	2
2	Farm diversification	Farm should be diversified with respect to animals also, Monocropping is discouraged	All the farmers kept some animals besides agriculture. With respect to animals 87% farmers kept more than one species of livestock and 64% farmers kept 3 or more than 3 species	2
3	Free movement of animals	There should be access to sufficient free movement	96% of livestock owners provided ample access of free movement to their animals	2
4	Provision of fresh air and natural day light	Sufficient fresh air and natural daylight according to the needs of the animals should be provided	All the farmers provided natural daylight and fresh air to their animals, as there was no environment controlled house	2
5	Protection against adverse weather condition	Animals should be protected against adverse weather condition	97% farmers provided any kind of shed for protection against excessive sun light or rain. All farmers provided either wallowing, cold water, or ventilated sheds to protect against high temperature.	2
6	Resting area	Enough lying and/or resting area according to the needs of the animal.	93% farmers provided sufficient resting/lying area.	2
7	Use of bedding material	For all animals requiring bedding materials, shall be provided	Only 4% provided any bedding material to animals.	0
8	Drinking water	Ample access to fresh water according to the needs of the animals	All farmers provided sufficient water but 61% provided water from wells and/or tubewells, which could be taken as fresh for Indian condition.	1

9	Expression of natural behaviour	Adequate facilities for expression of behaviour in accordance with the biological and ethological needs of the species.	80% farmer kept their animals in flock with ample excess to free movement for all animals, practices like weaning, artificial brooding, artificial insemination were not followed by farmers. So, animals can express their natural behaviour pattern.	2
10	Grazing	All animals shall have access to open air and/or grazing appropriate to the type of animal and season taking into account their age and condition	99% farmers provided grazing to their animals	2
11	Mutilation	Mutilations are not allowed. However, the certification programme shall allow the exception like castration, dehorning, ringing, tail docking of lambs and mulesing	64% farmer performed castration and/or 4% farmer performed ringing. No farmers followed any other mutilation practices	2
12	Origin of animals	All the organic animals should be born and raised on the organic holding. However, when organic livestock is not available, animals could be brought from conventional farm at certain age.	As no farm in the study area was organic, so ignoring the organic criteria, it was observed that in 18% farms the stock was borned within the farm and in another 80% farm some borned & some were purchased, the purchase was mostly to replace the old stock. The place of purchase was within the region for 70% animals.	1
13	Source of breeding stock	Breeding stock may be brought in from conventional farm. A yearly maximum of 10% of the adult animals of the same species on the farm.	Females were within the farm but males were from local area for 100% farmers	2
14	Breeds	Breeds should be chosen About 96% farmers kept which are adapted to local condition	'desi' (local) breeds for all animals.	2
15	Reproduction technique	Reproduction technique should be natural	All farmers follow natural service.	2

16	Use of high technological and capital intensive methods like, embryo transfer, heat synchronization, use of genetically engineered species, etc.	Breeding shall not include high technological & capital intensive methods like, embryo transfer, heat synchronization, use of genetically engineered species etc.	No farmer used these techniques.	2
17	Adequate feeding	Animals should be fed adequately with balanced diet in a form allowing them to execute their natural feeding behaviour and digestive needs	Only 61% farmer fed the animals adequately & there was doubt about the diet whether balanced or not	1
18	Feed	Livestock should be fed 100% organically grown feed of good quality. If, certain feeds are not available then 10-20% conventional feeds are allowed	No organically grown feed was available	0
19	Source of feed	All feed shall come from farm itself or be produced within the region	What farmers fed to animals about 80% came from own farm, 10% from neighbour's farm and 10% from market.	2
20	Cultivation of fodder	No specific standard but say all animals shall have daily access to roughage.	No farmers cultivated fodder	0
21	Use of synthetic growth promoter or stimulants, synthetic appetizer, preservatives, colouring agents urea, farm animal by products to ruminants, animal manure or droppings, solvent extracted feed, pure amino acids, genetically engineered organisms.	These should not be used.	No one used these substances	2

22	Treatment for sick and injured animals	Sick and injured animals shall be given prompt & adequate treatment.	Though 90% of farmers used to given prompt treatment but as 60 of the farmers sought the help of ojhas, the adequacy of treatment is questionable.	1
23	Type of treatment	Natural medicines and methods, including homeopathy ayurvedic medicine and acupuncture, shall be emphasized.	50% farmers provided traditional treatment, 4% provided homeopathic and 46% provided allopathic treatment	1
24	Vaccination	Vaccine shall be used only when diseases are known or expected to be a problem in the region of the farm and where these diseases can not be controlled by other management techniques	73% farmers used vaccine in cattle and 20% in poultry regularly. Most of the farmers did not use any vaccine. As disease outbreak was reported in the area, non-vaccination is not against organic principles. So, the farmers are midway of standards	1
25	Use of hormone	No hormone should be used, except for treatment of individual animal.	Only 6% farmers used oxytocin for let down of milk.	2
26	Record keeping	All records of the farm in details including the receipts should be kept.	No farmer kept record of farm input, outputs or of treatment of animals.	0
27	Use of draft animal	Draft animals must be well cared, must be used in a humane manner that cause least possible stress and suffering. There should be maximum and minimum age, no over work or overloading	Use of draft animals was almost humane by most of the farmers but 19% farmers said they sometimes beat their animals and/or 7% farmers overloaded them	1
28	Use of child labour	No child labour should be used.	Only 6% farmers used child labour.	2
29	Equality of wages	No discrimination irrespective of colour creed and gender for same work	There was no inequality of wages.	2
30	Use of farm yard manure	Manure should be used in crop field after proper treatment.	72% farmers used manure in field and 19% used it in biogas	2

Table-2: Use of draft animals by Tribal and Non- tribal livestock owners

Sl.No	Particulars	Tribal	Non-tribal	Total	
A.	Number(%) of livestock owner				ND
	1.having animals for drafting	37(74.00)	34(68.00)	71(71.00)	0.55
	2.Beat their animals at work	6(16.21)	9(26.64)	15(21.14)	1.05
	3.Use the sick animals	0(0.00)	0(0.00)	0(0.00)	-
	4.Overloaded the working animals	3(8.10)	4(11.76)	7(9.85)	0.43
B.	Average duration of works(hrs/day)				't'
	1.During summer	5.32±0.12	5.32±0.18	5.27±0.11	0.40
	2.during rainy season	7.03±0.14	7.17±0.10	7.09±0.09	0.76
	3. during winter	5.12±0.13	4.88±0.12	5.00±0.09	1.36

*Figures in parenthesis indicate percentage * indicate level of significance*