Knowledge level of farmers of Dharwad district towards farm waste management

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Abstract: Farm waste is a serious economic, environmental and social problem. There is a need to analyze different types of waste produced in production, processing and management practices for better utilization of agricultural waste materials. Farm waste management helps framers to reduce cost on fertilizers and increasing yield of crops. Farm waste conversion reduces waste flow into air, water and reduces greenhouse gas emissions such as carbon dioxide and nitrous oxide. An exploratory research design was used to know the knowledge level of farmers towards management of farm waste in the selected talukas of Dharwad district. From Dharwad district Dharwad and Kundgol taluka were selected. In total 120 farmers were selected through purposive random sampling technique. The data was analyzed by using suitable statistical tools. The results revealed that majority (90.00%) of the farmers in both Dharwad & Kundgol taluka had fully aware that farm waste includes crop waste, domestic waste and livestock waste followed by more than 75 per cent of the farmers were fully aware about utilizing farm waste and that will increase their crop yield. About 80 per cent of the farmers were aware that the farm waste can be used for production of different products. While very few of the farmers (37.00%) fell in low knowledge category. It could be concluded that, all the crop wastes are placed in the right time and right place for best utilization in order to convert into useful products and control of pollution by proper waste management.

Key words: Farm waste, Knowledge level, Utilization of farm waste, Waste management

Introduction

Farm waste is a serious economic, environmental and social problem. There is a need to analyze different types of waste produced in production, processing and management practices for better utilization of agricultural waste materials. By adopting waste management products all the crop wastes are placed in the right time and right place for best utilization in order to convert into useful products and control of pollution. (Omid Minooei and Mokshapathy 2017). Agriculture waste management practices integrate principles of crop production, sustainability of soil and environment quality.

Major practices related to on farm agriculture waste management are,

It is the product of the decomposition process using various species of worms, to create a mixture of decomposing agriculture waste, bedding material and vermicast.

It is organic matter that has been produced by decomposing agri waste in a process called composting. This process recycles various organic materials otherwise regarded as waste products and produces a soil conditioner. Or a mixture of various decaying organic substances, as dead leaves or manure, used for fertilizing soil.

Silage is the material produced by controlled fermentation, under anaerobic conditions by using chopped agriculture waste or forage with high moisture content. Silage is produced by the activities of naturally occurring bacteria that convert some of the plant sugar into organic acids that preserve nutritional qualities. The harvested crop stalks /stubbles chopped into small pieces and incorporated into the soil with varying efficiencies depending upon the left over crop residue. It improves the soil physical properties and hence, results in increased crop yield.

Farm waste management helps framers to reduce cost on fertilizers and increasing yield of crops. Farm waste conversion reduces waste flow into air and water. It helps in reducing greenhouse gas emissions such as carbon dioxide and nitrous oxide. Keeping this in view, the study was conducted to know the Farm waste management practices and their utilization in agriculture and allied sectors by the farmers of Dharwad district.

Objectives

To explore the Knowledge level of the farmers towards management of farm waste,

To study the Knowledge level of farmers towards utilization practices of farm waste.

Material and methods

The present study was conducted in Dharwad district of Karnataka state during the year of 2022-23. An exploratory research design was used to know the knowledge level of farmers towards management of farm waste in the selected talukas of Dharwad district. From Dharwad districts Dharwad and Kundgol taluka were selected. Purposive random sampling technique was used for selection of sample because multiple cropping systems are practiced in these talukas. From each taluka, 60 farmers were selected randomly. Hence a total of 120 (one hundred twenty) farmers were interviewed for the study. The farmers were interviewed individually using self structured...
questionnaire at their residences and fields to collect required
data. The answers to the questions were quantified by giving a
three score to fully aware and one score to not aware. Based
on the scores, the respondents were classified into the three
knowledge level categories viz., low, medium and high using
mean and standard deviation as measure of check (Fig.1). The
information collected through the responses of the
respondents, were suitably coded, tabulated and analyzed to
draw meaningful inferences by using statistical tools such as
frequency distribution and percentages.

**Results and discussion**

Table 1 revealed that, perspective statements were asked to
farmers on knowledge level of farm waste and farmers have
given their responses to each statement. The choices were
fully aware, partially aware and not aware. The results revealed
that the majority of farmers in Dharwad taluk were fully aware
that farm waste includes crop waste (90%) buying farm waste
causes health problems (78.33%), poor impact of improper
utilization of farm waste on farmers (53.33%). About more than
half of the farmers were partially aware that farm waste leads to
soil and water pollution. Same trend can be seen in Kundgol
taluk.

Knowledge level of farmers on benefits of proper utilization
of farm waste was depicted in Table 2 majority of the farmers
were fully aware that utilizing farm waste properly will increase
in the crop yield rate (85.00%), reduces environmental pollution.
better environment (71.67%), followed by less expenditure on
chemical fertilizers (66.67%) and f production of biogas by use
of farm waste (65.00%). Similar trend was observed in kundgol
taluka farmers about the benefit of proper utilizing farm waste.
The results are in line with study conducted by Shweta *et al*
(2010) which revealed that better farm waste management
increases biological efficiency of environment. The results of
the study are in line with the Santhebennur and Jogttappa
(2020) who reported that cent percent of the respondents were
aware about the causes of water pollution and land degradation
from their agricultural activities. More than 75 percent of the
farmers were well aware about direct effects caused by chemical
pesticides, chemical fertilizers and agro residue on the
environment.

Knowledge level of farmers on various products that can
be made from farm waste is depicted in Table 3. More than
80.00 percent of farmers in Dharwad taluka were fully aware
that farm waste can be used for production of different products
such as organic manure (88.33%), compost (85%). Nearly half
of the respondents were partially aware that farm waste can be
utilized for making poultry litter. Majority of the respondents
from both the talukas, were not aware that farm waste can be
utilized for making textile fiber and table ware. Less than 50 per
cent of the respondents were partially aware that farm waste

![Fig 1. Distribution of the farmers according to different categories of their knowledge level](image)

**Table 1. Knowledge level of farmers on Farm waste**

<table>
<thead>
<tr>
<th>Aspects of knowledge</th>
<th>Dharwad Fully aware</th>
<th>Dharwad Partially aware</th>
<th>Dharwad Not aware</th>
<th>Kundgol Fully aware</th>
<th>Kundgol Partially aware</th>
<th>Kundgol Not aware</th>
</tr>
</thead>
<tbody>
<tr>
<td>Knowledge on Farm waste</td>
<td>90.00</td>
<td>10.00</td>
<td>0.00</td>
<td>85.00</td>
<td>15.00</td>
<td>0.00</td>
</tr>
<tr>
<td>Farm waste includes Crop waste, domestic waste and livestock waste</td>
<td>78.33</td>
<td>20.00</td>
<td>1.67</td>
<td>63.33</td>
<td>33.33</td>
<td>3.33</td>
</tr>
<tr>
<td>Burning farm waste cause health problems</td>
<td>40.00</td>
<td>55.00</td>
<td>5.00</td>
<td>35.00</td>
<td>58.33</td>
<td>6.67</td>
</tr>
<tr>
<td>Proper farm waste management increase farmers income</td>
<td>55.00</td>
<td>41.67</td>
<td>3.33</td>
<td>50.00</td>
<td>46.67</td>
<td>3.33</td>
</tr>
<tr>
<td>Reduced burning of farm waste increases soil fertility and nutrients</td>
<td>46.67</td>
<td>50.00</td>
<td>3.33</td>
<td>45.00</td>
<td>46.67</td>
<td>8.33</td>
</tr>
<tr>
<td>Impact of improper utilization of farm waste on farmers</td>
<td>53.33</td>
<td>40.00</td>
<td>6.67</td>
<td>40.00</td>
<td>55.00</td>
<td>5.00</td>
</tr>
</tbody>
</table>

Note: Not aware-1 Partially aware-2, Fully aware-3 Note: Figures in table indicates percentage

| Table 2. Knowledge level of farmers on benefits of proper utilization of farm waste |
|--------------------------------------|---------------------|-------------------------|-------------------|---------------------|-------------------------|-------------------|
| Aspects of knowledge                                      | Dharwad Fully aware | Dharwad Partially aware | Dharwad Not aware | Kundgol Fully aware | Kundgol Partially aware | Kundgol Not aware |
| Increase in Crop yield                                   | 85.00               | 13.33                   | 1.67              | 78.33               | 18.33                   | 3.33              |
| Less expenditure on chemical fertilizers                 | 66.67               | 30.00                   | 3.33              | 53.33               | 40.00                   | 6.67              |
| Farm waste can be used for biogas production             | 65.00               | 31.67                   | 3.33              | 53.33               | 36.67                   | 10.00             |
| Farm waste can be used for vermicomposting              | 56.67               | 41.67                   | 1.67              | 46.67               | 51.67                   | 1.67              |
| Proper utilization of farm waste reduces environmental pollution | 71.67               | 23.33                   | 5.00              | 58.33               | 33.33                   | 8.33              |

Note: Not aware-1 Partially aware-2, Fully aware-3 Note: Figures in table indicates percentage
Knowledge level of farmers of Dharwad............................... can be used for making handicrafts and paper products. The trend is same in both the taluks. Stated by Jayan (2015) that farm waste can be used for developing innovative products. Data furnished in Figure 1 shows that an almost equal percent of the respondents were fell in all three categories i.e. 1/3ed of respondents were fell in low, medium and high categories of knowledge. The results are in line with Harshal (2016) finds lack of awareness among farmers is the major hurdle for better farm waste management.

Conclusions

Table 3. Knowledge level of farmers about various products that can be made from farm waste N=120

<table>
<thead>
<tr>
<th>Aspects of knowledge</th>
<th>Dharwad Fully aware</th>
<th>Partially aware</th>
<th>Not aware</th>
<th>Kundgol Fully aware</th>
<th>Partially aware</th>
<th>Not aware</th>
</tr>
</thead>
<tbody>
<tr>
<td>Production of Organic Manure</td>
<td>88.33</td>
<td>10.00</td>
<td>1.67</td>
<td>81.67</td>
<td>18.33</td>
<td>0.00</td>
</tr>
<tr>
<td>Compost</td>
<td>86.67</td>
<td>13.33</td>
<td>0.00</td>
<td>76.67</td>
<td>20.00</td>
<td>3.33</td>
</tr>
<tr>
<td>Vermi compost</td>
<td>86.67</td>
<td>11.67</td>
<td>1.67</td>
<td>80.00</td>
<td>16.67</td>
<td>3.33</td>
</tr>
<tr>
<td>Handicrafts</td>
<td>35.00</td>
<td>45.00</td>
<td>20.00</td>
<td>28.33</td>
<td>31.67</td>
<td>40.00</td>
</tr>
<tr>
<td>Poultry litter</td>
<td>8.33</td>
<td>60.00</td>
<td>31.67</td>
<td>20.00</td>
<td>51.67</td>
<td>28.33</td>
</tr>
<tr>
<td>Livestock bedding</td>
<td>85.00</td>
<td>11.67</td>
<td>3.33</td>
<td>83.33</td>
<td>15.00</td>
<td>1.67</td>
</tr>
<tr>
<td>Textile fiber</td>
<td>8.33</td>
<td>30.00</td>
<td>61.67</td>
<td>6.67</td>
<td>28.33</td>
<td>65.00</td>
</tr>
<tr>
<td>Table ware</td>
<td>6.67</td>
<td>6.67</td>
<td>86.67</td>
<td>6.67</td>
<td>5.00</td>
<td>88.33</td>
</tr>
<tr>
<td>Paper products / Cardboard</td>
<td>15.00</td>
<td>48.33</td>
<td>36.67</td>
<td>20.00</td>
<td>31.67</td>
<td>48.33</td>
</tr>
</tbody>
</table>

Note: Not aware-1 Partially aware-2, Fully aware-3

Note: Figures in table indicates percentage

The knowledge of the farmers on organic farming concepts especially pertaining to the use of chemical insecticides, herbicides and fertilizers is still need to be improved. Most of the farmers in both taluks are still dependent on conventional practices (which include chemicals) for controlling pests and diseases and they do not use organic matters like animal manure, plant manure, and kitchen waste to fertilize their plants. Research, development and marketing are also play important role in increasing the production of products through farm waste.

References


