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Management Problem of Crop Residues Production in Aliero Local Government Area of Kebbi State, Nigeria

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Abstract

A study was conducted to examine the management problems of crop residues production in five villages within Aliero Local Government Area of Kebbi State, Nigeria. A structured questionnaire was administered to 75 respondents within the study area. The data collected was analyzed using simple statistical tools such as frequency counts and percentages. The family size of the respondents showed that more than half (52.41%) had 5-8 members. Thestudy revealed that about 47.95% of the respondents were farmers. Mixed cropping is common to the household with cereal and legume crops combination. The type of crop residues was those from groundnut straws, cowpea straws, maize stover, millet stover and rice straws with sorghum stover constituting the highest (30.14%). Majority of the respondents (39.74%) source their crop residues from self-production. The study also shows that all the respondents encountered one or more management problems which limit crop residues production which ranges from the high cost of irrigation (78.08%), inadequate storage structures (75.34%) and inadequate capital (68.86%) among others constitute the prominent problems to crop residues production in the study area.

Keywords: Management problem, crop residues, production

Introduction

Crop residues availability is an important nutritional factor for ruminant production among the traditional small holder in Nigeria (Agishi, 1979). They are seasonally produced become available only after cropping period, if they are not used immediately, they have to be conserved until needed. The difficulty of handling and storing crop residues has not been given adequate attention by researchers (Hilmeson *et al*., 1984, Owen and Aboud, 1988). Devendra (1982) reported that exposure to heat decreased the nutritive value of rice straw. The availability of crop residues at the farm level depends not just on production levels but also on a variety of social and economic factors such as land, crop and animal ownership patterns, cultural practices, the use of modern crop varieties and the opportunities for market and non-market exchanges all influence a farmer's access to the residues that are locally produced (Hilmeson *et al*., 1984)

The availability of production and management information of crop residues can best take off by understanding the production situation of the farmers with a view to appreciating their challenges and thus how best to provide needed assistance.

However information on the management problem of crop residue production is missing in the study area. This is the focus of this present study.

Materials and Methods

Study area: The research was carried out in five villages of Aliero local government area comprising ofSabiyal, Kashinzama, Gumbulu, Danware and Jigabirni. The local government area is located in the south east of Kebbi state and lies between lat. 12^0 12^i N and long. 4^0 22^i E in the Sudan savannah agro-ecological zone. Semi-arid climate is common to the study area. It is characterized by erratic and scanty rainfall that lasts for about four months (May-September) and long dry period (October-April). The major occupation of the population is farming which is characterized by mixed farming (KARDA, 2012).

Data collection and analysis: A structured questionnaire was designed in order to obtain data collection. The questionnaire was distributed randomly among the population in the five villages. A population of 15 people from each selected village was chosen making a total of 75 respondents to evaluate the management problems of crop residues production among these farmers.

Statistical tools such as frequency distribution and a percentage was used in analyzing the collected data.

Results and Discussion

A total of 73 questionnaires were responded out of 75 copies distributed. The social characteristics of the respondents revealed that 78.08% were males and 21.92% were females. Majority of the respondents were within the age categories of 23-32 (39.60%) and 32-42 years (33.30%). Educational background of the respondents indicated that 38.36% and 36.99% had Quranic and primary education respectively and 17.81% and 6.85% had obtained secondary and post secondary education respectively. The family size of the respondents showed that more than half (52.41%) had 5-8 members. According to Zeller *et al*. (1998) who reported that household size has been identified to have either positive or negative influence on adoption and production level. Majority of the respondents (47.95%) were farmers, 30.14% were traders and 21.92% were civil servants. The age groups of the respondents in the two categories could be regarded as a responsive in the struggle to make ends meet. Majority of the respondents were farmers which could be attributed to their living in the rural area where most of the business to earn a living is by farming. This observation is in line with the study of Sanda and Kaka (2013).

Mixed cropping is dominant among the respondents (Table 1) in the study area with the main cultivated crops as sorghum and cowpea (36.99%) then followed by maize and cowpea (28.77%) and the least cultivated crop is onion with maize grown along the side of the onion beds.The common crop residues (Table 1) were those from groundnut and cowpea (28.77%), millet (30.14%), sorghum (27.40%), maize (12.33%) and the least was from rice straws (1.37%). This findings is in line with the work of Alhassan *et al*., 1983; Alhassan, 1986; Onwuka *et al*, 1997. These authors reported that maize and sorghum stovers play a major part in ruminant feeding in the Northern part of Nigeria. The sources of crop residues (Table 1) as indicated by the majority (39.73%) were completely self producing. While about 2.74% rely on the purchase of crop residues from the market.

Table 1: Crops cultivated, type and source of crop residues

Parameters	Frequencies	Percentage (%)
Type of crops cultivated		
maize/cowpea	21	28.77
sorghum/groundnut	5	6.85
millet/groundnut	19	28.03
sorghum/cowpea	27	36.99
Type of crop residues		
Grasses	0	
Groundnut/cowpea straws	21	28.77
Maizestover	9	12.33
Sorghumstover	20	30.14
Milletstover	22	30.14
Rice straws	1	1.37
Source of crop residues		
Self production	29	39.73
Self production/purchase	17	23.29
Self production/bush	25	34.25
From the bust	0	0.00
From the market	2	2.74

Source: field survey (2015)

Several reasons were identified as shown in table 2 by our respondents as regards to the problems associated to crop residues production in the study area. Majority of the respondents (78.08%) were of the opinion that high cost of irrigation and inadequate storage structures (75.34%) are the main factors limiting crop residues production. While the least respondents identified flood as a threat to crop residue production. According to Akinola *et al*. (2015) who reported that capital, credit and land are among the economic constraints factors limiting crop residues usage and production in Nigeria. This report is in agreement with the present study where more than half (69.86%) of the respondents are of the opinion that inadequate capital which is the main force of other factors limiting crop residues production in the study area. Larger family size could be associated with a greater labour force being available to the household for the operation of farm activities (Akinola *et al*., 20015). In the absence of sufficient family labour, the cost of hiring labour (Table 2) can limit the crop residue production in

the study area. Aruya *et al*. (2016) reported that inefficient management practices such as open dumping and burning of crop residues as a result of ignorant on the effective management and utilization limit the production of crop residues which is a reflection of inadequate storage structures.

Table 2: Constraints to crop residues production

Parameter	Frequency	Percentage (%)
High cost of irrigation	57	78.08
Problems of flooding	5	6.67
Inadequate capital	51	69.86
High cost of labour	47	64.38
High infestation of pests and diseases	41	56.16
Seasonality in production	35	47.95
Poor market prices'	33	45.21
High cost of fertilizer/manure	28	38.36
Inadequate storage structures	55	75.34

Source: field survey (2015)

Conclusion

Crop residue is an important component in Nigeria farming system. Improvement is however needed in the production of these residues in order to improve the output of our animals. This improvement can be achieved by developing or adopting technologies that will enhance the production and quality of forage crop species. Based on the findings of this study, chances are that the management problems encountered by the respondents in the production of crop residues can be improved.

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