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Varieties and Constraints of Millet Production in Katsina (A case study of Batagarawa local Government)

Abubakar Sulaiman Bindawa
Department of Agricultural Technology College of Agriculture
Hassan Usman Katsina Polytechnic, Pmb 2154, Katsina

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ABSTRACT
The study attempted to find out the varieties of millet and constraints in millet production in Batagarawa local government ofKatsina state. Four wards namely: Jino, Batagarawa 'B', Dandagoro and Bakiyawa wards were purposively selected from the local government because of the availability of millet producers in the area. Twenty (20)well-structured questionnaires were randomly distributed to each of the wards. The data obtained revealed the varieties of millet being produced in the study wereZango, Dan matsangari, Dan digaliand Dan Eka. All the varieties aside from Dan Eka are land races indicating a strong contribution of land races to food security of rural populations and to the resilience of farming systems. Problems encountered by millet producers in the study area as the study found out are lack of adequate assistance from the government, high cost of fertilizer, pest and disease attacks and shortage of land. The study recommends introduction of hybrid varieties to the study area. Easy access to credit facilities should also be made available to the concerned farmers. Production input should be made available and affordable.
Keywords: Millet, Varieties, Constraints, Batagarawa

I. INTRODUCTION

Millet are a group of highly variable small seeded grasses; widely grown around the world-as cereal crops or grains for fodder and human food (Singh et al., 2003).Millet are important crops in the semi-arid tropics of Asia and Africa (especially in India, Mali, Nigeria and Niger), with 97% of millet produced in developing countries. The crop is favoured due to its productivity and short growing season under dry, high temperature conditions. Milletis indigenous to many parts of the world. The most widely cultivated millet is pearl millet (pennisetumtyphoides) which is an important crop in Africa and parts of Asia. Finger millet, proso millet and foxtail millets are also important crop species. Millet has been consumed by humans for about 7,000 years and potentially had a pivotal role in the rise of multi-crop agriculture and settled farming societies (Newman et al., 2010).

Millets which is believed to have originated from West African wild grasses over 40,000 years ago (National Research Council, 1999) are identified by their small grain sizes and are considered as the 6th most important world cereal and also a fundamental crop in the dry lands of Sub-Saharan Africa, including the Sahel region (Basavarajet al., 2010). It originates from Africa from where it spread to Asia, the Americas and Oceania where it is cultivated predominantly as forage and/or mulch component of minimum tillage-based cropping systemsworld-as cereal crops or grains for fodder and human food (Singh et al., 2003).

Millet is well adapted to growing areas characterized by drought, low soil fertility, and high temperature. It performs well in soils with high salinity or low pH. Because of its tolerance to .difficult growing conditions, it can be grown in areas, where other cereal crops, such as maize or wheat, would not survive. Millet is a summer annual crop well-suited for double cropping and rotations (CGIAR, 2006).

Millet can grow in a wide range of ecological conditions and can still yield well even under unfavorable conditions of drought stress and high temperatures. It is generally grown between 40^0 North and 40^0 south of the equator, in warm andhot countries characteristic of the semi-arid environment (Gari, 2002).

Millet is a warm weather crop and grows best at 20^0 C to 28^0 C. Millet is more tolerant to higher temperatures than probably any other cultivated cereal. These useful characteristics mean

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that it is finding a new niche in some unexpected places. The best temperature for the germination of millet seed is 23^0 C to 32^0 C. Millet seed does not germinate and grow well under cool soil conditions. They grow well on well drained loamy soils. They will not tolerate water-logged soils or extreme drought (Anon, 2012).

About 80% of the world's millet is used as food, with the remaining being used for stock feed, beers (local and industrial), and other uses. Foods prepared from rnillet are several and differ from country to country and occasionally from region to region. In West Africa, the main food dishes from pearl millet vary by country. (Obilana and Manyasa, 2002).

There are diverse groups of millet typical of different parts of the world (Obilana and Manyasa, 2002). The genuinely African millets are pearl and finger millets. Millets are cultivated across several countries in three sub-regions of Africa.

Finger millet is cultivated mostly in Eastern, Southern and Central Africa, Uganda, Western Kenya, Sudan and Eritrea, Zimbabwe, Zambia, Malawi, Madagascar, Rwanda, and Burundi (Asungre, 2014). Fonio is only cultivated in West Africa mostly in Mali, Burkina Faso, Guinea and Nigeria (Obilana and Manyasa, 2002). These are often classified as "minor" millets because their cultivation is limited to specific geographic areas and have no, relevance in international agricultural trade beyond the farmer grassroots (Gari, 2002).

Pearl 'millet (pennisetumtyphoides) is known as Geroin Hausa language of northwestern Nigeria and yadiin Marghi language of northeastern Nigeria. It is the most important and probably having the greatest potential among millet varieties. . It is one of the most important dual purpose crop and a staple food for millions of people in the arid and semi-arid ecologies in Nigeria (Chopra, 2003). Pearl millet is the sixth most important crop in arid and semi-arid areas of Africa (F.A.O, 2015). It is grown in over forty countries predominantly in Africa and Asia as a staple food grain and source of feed and fodder, fuel and construction materials (F.A.O, 2015).The variety is well adapted to some extent to growing areas characterized by drought, low fertility and high temperatures. It could relatively perform well on soils with high salinity and low pH values. Becauseof its tolerance to difficult growing conditions, it can be grown where other cereals such as maize and wheat can't survive.

Local landraces (varieties named by farmers) still contribute strongly to food security of rural populations and to the resilience of farming systems (Sahriet al., 2014). Therefore so many studies have been carried out on landraces of pearl millet in various parts of the world. Mohammed (2005) reported that there are about six local landraces of pearl (resulting from years of continuous cultivation) in use by smallholder farmers in semi-arid northern Nigeria.

The objectives of the study are:

1. To identify the millet varieties commonly cultivated in the study area
2. To identify the problems encountered by millet producers in the study area.

Study Area

The study was carried out in Batagarawa Local Government of Katsina. State. It is southwest of Katsina town and has two (2) districts namely Batagarawa and Ajiwa (Anon, 2012). It covers a total land area of about $444km^2$. The prevailing temperature in the area varies a little depending on the season of the year. Usually it ranges from 26° C-32° C with average value of 30^0C. The annual rainfall received in the area is about 500mm and a humidity of 40-50 (Anon, 2012).

The main activity in the area is farming and majority of the population are peasant farmers that contributes greater percentage of agricultural output. Sorghum, millet, cowpea, sesame and groundnut are some of the major crops grown in the area (LawaI, 2010).

Data Collection

The data for this study was obtained by the use of a well-structured questionnaire. Sampling procedureadopted was purposive to obtain information from farmers engaged in millet (Pennzsetumtyphoides) production. Four wards namely: Jino, Batagarawa 'B', Dandagoro and Bakiyawa wards were purposively selected because of the availability of millet producers in the area. Eighty (80) structured questionnaires were randomly distributed. Twenty (20) questionnaires were distributed in each of the four wards.

Data Analysis

The data obtained was analyzed by means of simple descriptive statistics consisting of frequency and percentage to achieve all the objectives.

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II. RESULTS AND DISCUSSION

Table 4.1: Bio data of Respondents

Gender	**Frequency**	**Percentage Distribution**
Male	77	96.3
Female	3	3.7
Total	**80**	**100**
Age	**Frequency**	**Percentage Distribution**
Below 25 years	4	5
25-30 years	9	11.2
31-35 years	11	13.8
36-40 years	22	27.5
41 years and above	34	42.5
Total	**80**	**100**
Marital Status	**Frequency**	**Percentage Distribution**
Married	73	91.3
Single	5	6.2
Divorced	-	-
Widowed	2	2.5
Total	**80**	**100**

Source: Field Survey, 2020

The data obtained revealed that 96.3 of the respondents were male while 3.7 were females. The dominance of males in farming agrees with Oyedele and Yahaya (2015). It also confirms the findings of Onuk (2010) which found that males constitute 'the majority in production because females are mostly involved in processing activities and domestic works.

Table 4.1 indicates the respondentsage distribution and marital status. The table reveals that 13.8% of the respondents were between the ages of 31-35 years, 27.5% represented 36-40 years, 42.5% represented 41 years .and above. 25-30 years and below 25 years were found to be 11.2% and 5% respectively. The table reveal that respondents with 41 years and above are actively involved in farming. The study agrees with the findings of Jamilu, (2016), signifying that farmers were within the agricultural productive age range of 30-50 years. The findings revealed that 91.3% of the respondents were married, 6.2% were single while 2.5% were widowed. This could be attributed to the culture of the people in the area, which encourages early marriage. The findings are in line with that of Onuk (2010).

Table 4.2: Varieties of Millet Produced by the Respondents

Variety	**Frequency**	**Percentage Distribution**
Dan Matsangari	32	40%
Dan Dagali	27	33.8%
Dan Eka (Improved)	15	18.7%
Zango	6	7.5%
Total	**80**	**100%**

Source: Field Survey, 2020

Table 4.2 shows the varieties of millet being produced in the study area in which 7.5% of the respondents produced Zango, 40% produced Dan matsangari, 33.8% produced Dan digali while 18.7% produced improved varieties locally known as Dan Eka. The findings are in line with that of Sahriet. al., (2014) who noted that local land-races' (varieties named by farmers) still contribute strongly to food security of rural populations and to the resilience of farming systems. The reason for less production of the Zango variety is because of the inability of the farmers to obtain information on weather forecasts as the variety requires more moisture compared to the other varieties named.

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Table 4.3: Problems Encountered by the Respondents

Problems Encountered	Frequency	Percentage Distribution
Inadequate assistance from Govt.	49	61.3%
High cost of Fertilizer (Inorganic)	23	28.7%
Shortage of Land	3	3.8%
Pest and Disease Attacks	5	6.2%
Total	**80**	**100%**

Source: Field Survey, 2020

Table 4.3 shows the problems encountered by millet producers in the study area. The table reveals that the main problem encountered by respondents are; the lack of adequate assistance from the government, high cost of fertilizer, pest and disease attacks and shortage of land as they constitute 61.3%, 28.7%, 3.8% and 6.2% of the respondents respectively.

The findings are in line with the views of Yusuf et. al., (2007) who indicated that inadequate credit support from government is one of the major problems hindering millet production as well as agricultural production in Nigeria.

III. SUMMARY, CONCLUSION AND RECOMMENDATION

The study found out the different millet varieties cultivated within the study area (Batagara LG) and also the constraints been faced in millet production in the area. This information was derived through distribution of well-structuredquestionnaires in the four wards of the local government producing millet the most. Data obtained was analysed by using descriptive statistics. From the results obtained, it can be concluded that farmers in the study area are mostly using local varieties of millet. Three out of the four varieties used are local land races. The major constraint pointed out during the survey was poor participation/intervention of government in millet production in the study area.tr

The study recommends introducing hybrid varieties in the study area. Awareness programmes should be carried out in the study area to educate farmers how to access government credit facilities.

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