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A FIELD AGRONOMIC EVALUATION OF *TYPHA GRASS* IN TOMAS DAM KANO STATE NIGERIA

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ABSTRACT
The study was carried out by measuring plant height, length of leaves, width of the leaves, length of inflorescent, length of inflorescent tip were also measured with a measuring tape. Number of tillers per plants was counted. Soil auger was used to take soil samples randomly from ten different locations in Tomas Dam Kano states Nigeria. At the depths of 0-5cm, 5cm – 10cm, 10cm – 15cm. The soil samples were put into polyethylene bags and labelled according to their depth for mineral analyses. In the two season calcium, nitrogen and phosphorus constitute the highest concentration of the minerals at 0—5 cm depth. There is no significant differences in terms of mineral composition between wet season and dry season. ($P<0.005$).There is significance differences between plant Length of inflorescent and length of inflorescent tip when the two season are compared.

KEYWORDS*: Typha* grass, field, agronomic evaluation,

INTRODUCTION

Typha grass can be found in wetland, sedges and meadows along moving streams, rivers banks and lake edges. The plant is found in areas of fluctuating water level such as road side ditches and reservoirs (Morton 1975). It is an erect perennial freshwater aquatic herb which can grow up to 3 or more meters in height. The leaves are thick ribbon like structure which have a spongy cross-section exhibiting air channels.

The subterranean stem arises from thick creeping rhizomes. Flower structure is a dense, fuzzy, cylindrical spike on the end of stem, with a gap 1-3 cm of naked stem between the upper, male portion (stamina) an lower, female (Pistillate) portion. is a clonal monocotyledon with sword-like leaves that grow vertically from the shoot base. The leaves are made of aerenchyma tissue and a large portion of biomass allocation is directed toward sexual reproduction(Mal, Mal, T. K., J. Loveet-Doust and L. Lovett-D0ust (1997). At maturity the spike bursts under dry condition releasing the fruits. The fruits have bristly hairs that aid in wind dispersal. When the fruits come in contact with water, the pericarp opens rapidly, releasing the seed.

The fruits often fall to the ground in dense mats. Vegetative reproduction occurs through an extensive rhizomes system which is responsible for the maintenance and expansion of existing stands (Shekhov, 1974).Studies conducted on Typha germination suggests that seeds germination can be 100 percent in slightly flooded condition (Smith, 1967). Typha studies revealed that its basic requirements are wet pure sand, peat, clay and loamy soil. It also requires higher percentage of nitrogen. Best germination of Typha grass is obtained under non saline condition and germination decrease with increase in salinity. Absence of light completely inhibited seed germination of Typha grass (Gulzar, 2002).

Typha grass causes a variety of problems in Nigeria that are broadly similar to those caused by Typha grass elsewhere in the world (Morton, 1975). Earlier studies (NIFFR, 2000) revealed that, this plant caused problems in Hadejia|Jama`are, Jigawa state, and Bagga Kano state, in Nigeria. Such problems includes interfering with water from flood lands; impeding the movement of boats for transport, fishing and recreation among others It also interfers with various methods of catching fish; competing with rice in paddy systems, leading to degrading of

water quality by adding taints and odours to the water, thus, decreasing dissolved oxygen content. It also alters the flora and fauna of aquatic ecosystems as well as a reduction in light penetration within the aquatic system.

The aim of this study is to evaluate Environmental factors which favours growth of Typha grass in Kebbi and Katsina state with the aim of determining its current status.

Results of the study are expected to provide appropriate recommendations to solve problems posed by Typha grass on the water bodies so that, optimal uses of the lakes and rivers in this two states may be enhanced, and also to provide information on seasonal variation in the plant morphology and minerals composition.

Table 1: Morphological features of Typha grass during dry season in Tomas Dam Kano States.

Plant height	2m	2.5m	2.8m	2.5m	2m
Length of leaf	2.1m	2m	1.8m	19m	2m
Width of leaf	0.5cm	0.4 cm	0.5 cm	0.8 cm	0.8cm
Length of inflorescent tip	22cm	31.0 cm	19.6 cm	25 cm	30cm
Length of inflorescent	42cm	90 cm	36 cm	39 cm	42cm
No. Of tiller	8	9	10		5

Table 2: Morphological features of Typha grass during wet season in Tomas Dam Kano States.

Plant height.	2.0m	2.5m	3m	1.5m	2m
length leaf	2m	1.75m	1.75m	2m	1.8m
width of leaf	0.5cm	0.8cm	0.5cm	0.5cm	0.5cm
Length of inflorescent tip	Absent in wet season				
Length of inflorescent	Absent in wet season				
No. of plant	8	6	5	2	5

MATERIALS AND METHODS

This study was carried out at Tomas Dam, Kano state Nigeria in 2007.The plant height, length of leaves, width of the leaves, length of inflorescent, length of inflorescent tip was measured with a measuring tape. Number of tillers per plants was counted. Soil auger was used to take soil samples randomly from ten different locations, at the depths of 0-5cm, 5cm – 10cm, 10cm – 15cm. The soil samples were put into polyethylene bags and labelled according to their depth for mineral analyses. Depth of the water was also measured, with measuring tape and samples were collected into plastic bottles.

The soil samples were air dried to stop microbial activities before taken to laboratory. The soil was analyzed at Ahmadu Bello University, Zaria using Flame Photometer (Model Jeaway pf p7) . All data collected on morphology of the plant were subjected to statistical analysis using one- way ANOVA .

RESULTS AND DISCUSSION

The result in tables 1and 2 show the morphological characteristics of Typha grass during wet season and dry season in Tomas dams Kano state. Soil nutrient figures) 1, and 2 showed the mineral composition of Tomas Dam Kano state at different season and soil depth studied. Figure 1 showed that soil depth between 5-10cm has the highest percentage of nitrogen, phosphorus, calcium, magnesium and potassium during dry season compared to other depth. It also follows the same pattern during wet season.

DISCUSSION.

The mineral composition of the two season indicated higher concentration of minerals at soil depth 5-10 cm. How ever potassium was found in higher percent at 10-15cm depth. This may be due to leaching. In the two seasons calcium, nitrogen and phosphorus constitute the highest concentration of the minerals at 0—5 cm depth. This might

be as a result of extensive use of fertilizers by farmers which might have been leached by rain to Typha infested areas. The same observation was reported by Singh *et. al*. (1976) that, sometimes the chemical fertilizer applied by the farmer may not be useful to the plant rather it gets leached or washed away by rain water to lowland areas.

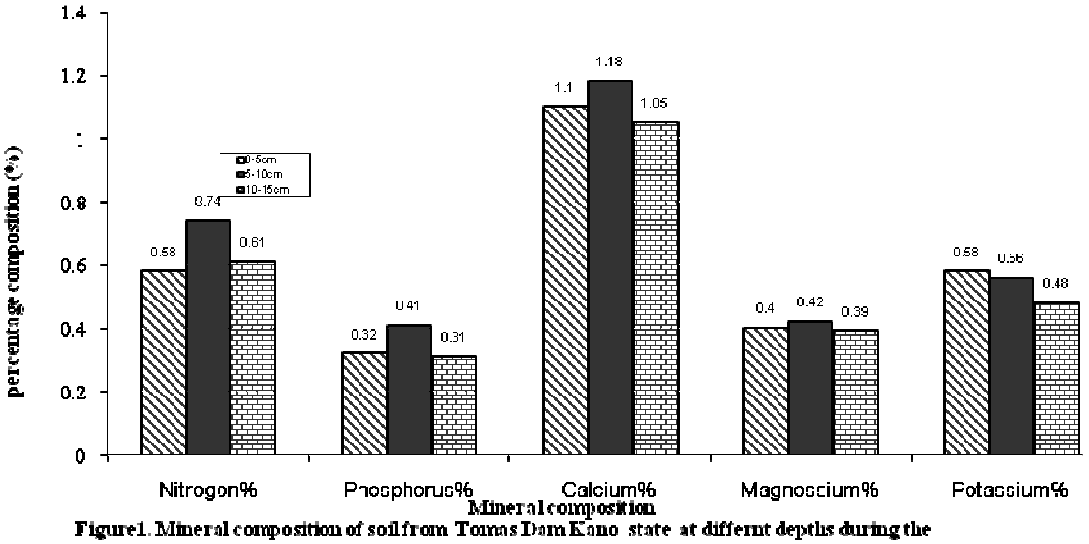

Figure1. Mineral composition of soil from Tomas Dam Kano state at differnt depths during the wet season

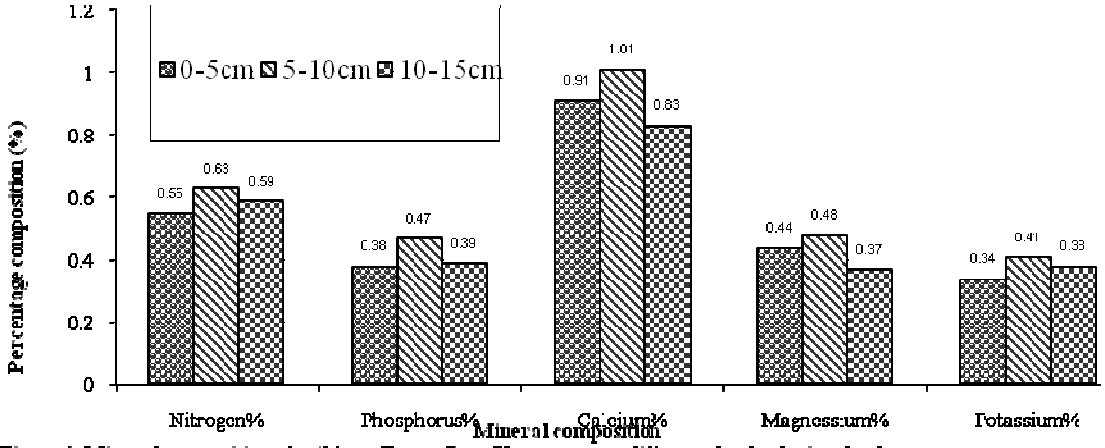

Figure 2. Mineral composition of soil from Tomas Dam Kano state at different depths during the dry season

From the study it is recommended that the best time for controlling Typha grass is during wet season. That is the time when the grass does not bear flowers.

The soil nutrient studied at different depths in the two states showed that calcium and nitrogen have the highest percentage for the two seasons studied. This may be associated with the fact that during the wet season farmers use chemical fertilizer in their farms which gradually wash away into to Typha infested area. Therefore this study recommend that, excess use of chemical fertilizer by the farmer should be minimized if possible organic manure should only be used only.

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