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The relative study of the force of organic cow dung manure on the development rate and yield performance of corn

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Abstract
The survey which aimed at judging the result of natural manure on the boom and yield of corn. The experimental layout used changed into randomized whole block layout (RCBD) with three treatments each of which become repeated three times, yielded a overall 9 plots measuring 3 by 3 meter. The parameters calculated had been number of plant leaves, stem girth, plant top and frequency of cob and weight of cob after harvest. The investigation shows that there were large distinction ($p<0.05$) between the treatments, applied to the parameters calculated. It was located that treatment I (fowl dropping) gave the finest distinction between the treatments. Therefore, based totally at the findings, fowl losing is recommended to farmers for maximum development and manufacturing of corn output.

Keywords: growth, yield, corn, variety, cow dung, organic manure

Introduction
The manure of cow dung is an effective and important source (Abhishek Raj, 2014) of nitrogen for the production of crops in the small area. It helps farmers remove inputs of commercial nourishment, thereby growing the profit margin (Asian Agribiz, 2017) of the grower. Nutrients contained in natural composts are discharge all the more gradually and are put away for a more extended time in the soil effect along these lines guaranteeing a long remaining impact. Corn belongs to the grass family of the Gramineae (Gordon 1993) [6], it is widely produced in both tropical and sub-tropical areas of the globe in hot and cold climate. The popularity of corn has increased enormously throughout the Earth. It is one of the most domesticated and evolved members of the plant realm. Indian corn is sown at 25cm – 75cm between rows, and for one plant per stand sown at 90cm between rows, and 40cm within row for two plant stands (Schrmpt, 1965) [7]. Digestibility of the dissimilar sections of the plant ranged from 33.85% to 59.03%. The amount of highly digestible residue averaged 13.4 lb/bu of grain. Digestibility and amount of residue have considerable impact on the stocking rate and public management of cows on corn stalks market (S, Rao AU, Ramana AV, Ramesh G, 2014) [8]. Subsequent crop yields were not affected by grazing. The N.P.K fertilizer to the soil actually boosts the performance of Indian corn. Over the years, grain yields have depreciated drastically due to the degrading nature of soils, low import and poor fertilization technology to develop the fertility of the mud. The grain also consist an appreciable quantity of iron and calcium (Mangel 1978) [9]. It prefers high open land and requires manure as it exhausts the soil (Bray and Kurtz, 1945) [3] maintenance of land fertility is essential for optimum and sustained yield. Utilization of inorganic manure fertilization to replenish soil nutrients and increase harvest yields, but are also pricey for the peasant farmers (Agbogidi and Okonmah). So analysis of the corn are done by some treatments on the Mean Plant Height, Mean Stem Girth, Mean Number of corn Cob and Mean Weight of Fresh, percentage of total plant DM and Digestible plant parts of corn.

Materials and Methods
The operation performs with mean yearly rainfall of 1700 mm and yearly temperature of 300 C and relative humidity of around 90% during rainy season and 70% during dry season. Farms are gathered cow dung manure and poultry dropping during the experiment process. The ranches where operations perform on the corn plant were bovine fertilizer compost and poultry dropping which were additionally assembled from the ranches. The parameter considered after planting and harvesting, which is include 45 days, 5 corn plants, 7 stem girth, 7 plant height and how much of cobs and how many weight of the fresh and clean corn. Land preparation, planting materials and techniques, investigation began in July and finished in Sep 2016 with a total experimental area of 16 by 14 meter. The plants were isolated into leaf edges, leaf sheaths grain, shanks, husks, and cobs. Stems, were valued individually and then separated into top one/third and bottom two/third shows in Table 1. Analyzing of the samples for 36 hour after dried on 61^0C and weighted Soybean yields the subsequent growing season and corn takes the following growing season were measured with the yield observe on the join in Table 2. The solid ground was cleared, plowed, tilled and marked into three 3 blocks and three 3 beds each measuring 3 by 3 meters were created in each block, creating a total of 9 layers inter block and inter bed distance of 80 cm was applied. The sources were planted 2 per hole at the depth of 2 centimeters with a spacing of 75 by 25 centimeters randomized complete block design was used for the survey, and the treatments were each repeated 3 times. The treatments used are 22kilograms of Poultry dropping in Table 3, 22

kilogram of Pig Dung in Table 4 and control or no treatment in Table 5.

Result and Discussions

Determination of the corn plant parts digestibility values and any change in the digestibility from the top to the bottom of the base shows in Table 1 and Table 2 shows amount of residue available and if it was affected by grazing treatment. Table 3 shows the result of pre- planting soil analysis carried out. It shows that the soil is low in nitrogen content, organic matter, available phosphorous exchangeable base, organic carbon and effective cation exchange capability. This means that the dirt is insufficient in nutrients and low productivity. Stem size of corn at (3, 5, 7 and 9 WAP) are shows in Table 4. The appropriate response demonstrates that treatment 1 gave the most elevated mean stem girth of corn over the weeks, while treatment 3 gave the least mean stem girth of corn over the weeks. The outcome brings out that there were significant difference p is less than 0.05 mean $p<0.05$ among the discussions. The mean corn pant length measured at (2, 4, 6 and 8 WAP) respectively are shown in Table 5. The output indicates that treatment 1 which is poultry dropping gave the highest mean length of corn plant over the weeks using by pig dung, while control which is treatment 3 gave the least mean plant length. This Table also exposed that there were significant difference $p<0.05$ between the treatments. The mean number of corn leaves measured at 2, 5, 7 and 9 WAP) respectively are shown in Table 6. Table reveals that treatment 1 gave the highest mean number of leaves of corn plats over the weeks, in this treatment including2-pig dung, while treatment 3 controls gave the least mean number of corn leaves. After harvesting measured the mean number of corn cob and weight of corn in kilograms are shown in Table 7. The outcome revealed that treatment 1 that is poultry dropping gave the maximum mean number of corn cob and weight of new corn, using by pig dung treatment 2, while control treatment 3 gave the least mean number of corn cob and weight of new corn. This is likewise indicated that there were significant difference $p<0.05$ among the treatments.

Table 1: Determination of the plant parts digestibility values**.**

Plant Part	Percentage of corn plant DM	SEM	lb/bu[1]	SEM	IVDMD	SEM
Top 1/3 stalk	3.65	0.0012	1.19	0.04	37.55	0.78
Bottom 2/3 Stalk	41.79	0.005	14.10	0.58	33.83	1.72
Leaf	18.69	0.002	6.28	0.23	45.68	0.72
Leaf sheath	12.58	0.003	4.21	0.13	38.54	0.69
Husk	7.44	0.002	2.49	0.05	59.01	0.74
Shank	1.07	0.0012	.35	0.01	49.72	1.14

14.4 % moisture corn grain.

Table 2: Digestible plant parts, lb DM/bu1

Plant Parts	lb/bu
Leaf and husk	7.79
Husk, Leaf and sheath of leaf	12.02
Leaf, leaf sheath, shank, and husk	12.38

14.4% moisture grain

Table 3: Pre-Planting Soil Analysis.

Sand (%)	38.6
Silt (%)	3.02
Clay (%)	2.98
Soil PH	4.54
Class of Textural	
Organic Carbon (%)	0.79
Organic Matter (gkg-1)	2.39
Total Nitrogen (%)	0.07
Available P (mgka)	35.15
$Ca2^+$ (emol/kg	1.39
$Mg\ 2^+$ (emol/kg	0.15
Na^+	0.24
K^+	0.14
H^+	0.44
$Al3^+$	0.02
Base Saturation (%)	71.89

Table 4: The result of the treatments on the mean stem girth of corn.

Treatment	3WAP	5 WAP	7 WAP	9 WAP
T1	4.22	8.01	7.45	6.60
T2	4.20	6.89	7.65	6.32
T3	3.21	5.05	5.03	4.55
LSD (0.05)	0.8382**	0.35**	0.74**	1.027**

Table 5: the effect of the treatments on the mean plant length of corn.

Treatment	3WAP	5 WAP	7 WAP	9 WAP
T1	32.07	87.72	197.40	226.64
T2	29.53	78.61	174.30	169.78
T3	23.19	62.29	102.17	169.10
LSD (0.05)	7.7518**	10.51**	63.91**	13.7**

Table 6: The treatments effect on the mean number of corn leaves.

Treatment	3WAP	5 WAP	7 WAP	9 WAP
T1	7.38	10.33	14.49	15.35
T2	6.66	9.95	12.09	14.55
T3	6.32	7.69	11.1	13.01
LSD (0.05)	0.14**	0.27**	0.36	1.74**

Table 7: The Effect on the mean weight of Fresh corn and Mean Number of corn cob after harvesting treatment.

Treatment	Mean number of Corn	Mean Weight of Fresh Corn Cob (kg)
T1	13.15	3.80
T2	12.71	2.64
T3	12.12	2.55
LSD (0.05)	0.32**	0.29**

Conclusion

Developed on the revelations from this work, it can thusly be assumed that, the usage of dairy animals squander has a noteworthy power on the advancement and yield execution of corn. It has created the general best result in each one of the parameters including the final yield.

Reference

1. Amos H, Vonci N, Fagam AS, Garba A. Effect of Cattle Manure on the Growth and Yield Performance of Vegetable Maize (Zea mays Saccharata) Varieties under Irrigation. Scholars Journal of Agriculture and Veterinary Sciences. 2015; 2(4A):319-323.
2. Sharma AR, Mittra BN. Effect of different rates of application of organic and nitrogen fertilizers in a rice-based cropping system. Journal of Agricultural Science. 1991; 117:313-318.
3. Bray RH, Kurtz LT. Determination of total organic and available forms of phosphorus in soils. Soil sci. 1945; 59:39-45.
4. Abou El-Magd MM, Hoda MA, Fawzy ZF. Relationships, growth, yield of broccoli with increasing N, P or K ratio in a mixture of NPK fertilizers. Annals of Agricultural Science. 2005; 43(2):791-805.
5. Kang BT, Juo ASR. Management of low-acidity soils in Tropical Africa for food crop production. In Terry, E.R. (ed). Tropical Root Crops, Research strategies for Ottawa, Ontario, 1980.
6. Gordon NB. and Whitney, Nitrogen Management in Furrow Irrigated Ridge Tilled Corn. Journal of Production Agriculture. 1993; 6:213-217.
7. Schrmpt K. Maize cultivation and fertilization lock wood inc Ltd London, 1965, 65-74.
8. Keerthi S, Rao AU, Ramana AV, Ramesh G. Realtionship between fresh cob yield and yield components of sweet corn. Scholars Journal of Agriculture and Veterinary Sciences. 2014; 1(4A):227-229.
9. Mangel. Principles of Plant Nutrient. International Potash Institute, Borne, Switzerland, 1978.
10. Onwueme IC, Crop Science Cassed Ltd. 1978, 166.
11. Roth GW, Fox RH. Soil Nitrate Accumulation following Nitrogen Fertilizer Corn. In Pennsy Environment Quall, 1990; 19:243-248.
12. Asiegbu, Uzo. Evaluation principle in Fertilizer 1984, 50.
13. Abou El-Magd MM, Hoda MA, Fawzy ZF. Relationships, growth, yield of broccoli with increasing N, P or K ratio in a mixture of NPK fertilizers. Annals of Agricultural Science. 2005; 43(2):791-805.
14. Seifritz W. Alternative and renewable source of energy in optimizing yields the role of ertilizers. Proceedings of 12th IPI Congress, 1982, 2081-2090.
15. Makinde EA, Agboola AA, Oluwatoyinbo FI. The effects of organic and inorganic fertilizers on the growth and yield of maize in a maize/melon intercrop. Moor Journal of Agricultural Research. 2001; 2:15-20.
16. Shah STH, Ahmad MI. Effect of integrated use of farm yard manure and urea on yield and nitrogen uptake of wheat. Journal of Agriculture and Biological Sciences. 2006; 1:60-65.
17. Shah STH, Zamir MSI, Waseem M, Ali A, Tahir M, Khalid WB. Growth and yield response of maize (Zea mays L.) to organic and inorganic sources of nitrogen, Pakistani Journal of Life Sciences. 2009; 7:108-111.