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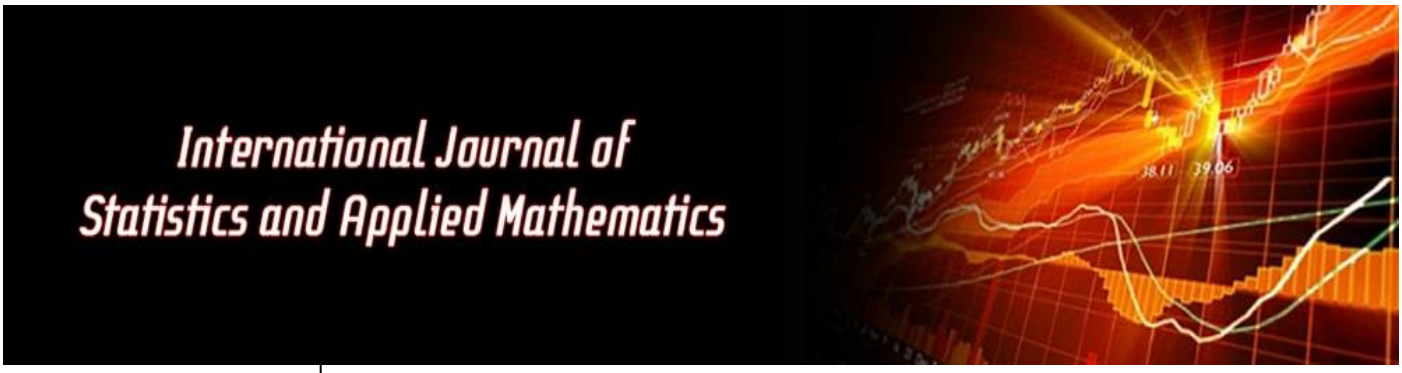

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Impact of technology adoption on production and productivity of banana cultivation

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Abstract
The study on Impact of technology adoption on production and productivity of banana in Barabanki District were carried out in the year 2018-19 by following the random sampling, 120 respondents were selected from the two blocks. Out of total respondents 47.5% of the respondent belong to the age 50 years and above of age group. 25.8% of farmers were educated up to intermediate level. After studying the awareness of respondents, it was found that impact of banana farming only 55.0% of the respondent were belong to the orchard area 2-5 acre. Most farmers in the study area are 22.5% of cultivators have knowledge about 1.6 × 1.6 spacing between the trees yield of banana. Maximum 39.2% of the farmer's trees take 16 months to obtain economic yield. It was conclude that more agriculture as a primary sector continues to play a dominant role in increasing the growth and development of Indian economy and it is important to revitalize the agricultural sector. The majority of the banana growers possessed medium level of knowledge, impact of technology, adoption and attitude of banana cultivation. They should be facilitated with technical know-how and motivate them to participate in the farmers training, extension activities to rise the knowledge and adoption of recommended banana cultivation technology.

Keywords: Adoption, banana growers, impact, orchard area, technology

Introduction
Banana is the most popular fresh fruit all over the world and its name comes from the Arabic word 'banana', which means finger. The scientific name of Banana is *Musa acuminata* and *Musa balbisiana.* But the old scientific names of banana are *Musa sapientum* and Musa paradisiacal. Bananas are rich source carbohydrates and potassium. These are the first choice of athletes owing to its high energy potential. In India production of banana is highest in Gujarat followed by Tamil Nadu. These states feed the growing demand for banana of non-traditional banana growing states like Uttar Pradesh. Therefore, there is ample scope for development of banana cultivation in Uttar Pradesh. In Uttar Pradesh, the banana crop is grown in the districts of Barabanki, Lucknow, Baharaich, Shravasti, Gorakhpur, Maharajganj, Basti, Sant Kabir Nagar, Sidharath Nagar and Kaushambi. Fertility of soil is very important for Successful cultivation, as banana is a heavy feeder. The productivity in UP is 46.73MT/ha. Bananas are valuable source of vitamin B6; vitamin C and potassium almost all export bananas are of the dessert types. A wide variety of health benefits are associated with the curvy yellow fruit. According to Ayurveda, all the parts of the Banana tree have healing properties. The banana tree uses are listed as follows: juice of banana flowers helps during painful menstruation, juice of Banana stem helps in flushing out kidney stones, banana leaves alleviate stomach disorders, banana corm reduce acidity and burning sensation. Raw and ripe fruits have separate culinary and medicinal benefits. Bananas are known to reduce swelling, protect against developing type-2 diabetes, aid in weight loss, strengthen the nervous system and help with production of white blood cells, all due to the high level of vitamin B6 that bananas contain.

Research Methodology
The study entitled, "Impact of technology adoption on production and productivity of banana" was conducted in Barabanki District during 2018-19 and two blocks selected in this study. From each selected block, a list prepared. From each block, three villages were selected for

study purpose and 20 respondents selected from each village. These areas shall present different segment of Banana farming Dependent and independent variables namely age, education, religion, caste, type of house, type of family, size of family, annual income, land holding etc. were used the collected data were subjected to statistical analysis for which statistical tools, percent, weighted mean, arithmetic mean, rank and standard deviation.

Results

Table 1: Distribution of the farmer according to the age group

Age group	Frequency	Percent	Mean ± SD
30 to 40 years	8	6.7	38 ± 1
40 to 50 years	55	45.8	45 ± 3
50 years and above	57	47.5	55 ± 5
Total	120	100.0	50 ± 5

Table 1: reveals that distribution of the farmers according to the age group 47.5% of the respondent belong to the age 50 years and above with mean age 55 years and standard deviation 5 years, followed by 45.8% of respondent were belong to the 40-50 years age group with mean age 45 years and SD 3 years in the study area Barabanki. Only 6.7% of Banana cultivators were belong to the age 30-40 years with mean age 38 years and overall mean age of the banana cultivators were found to be 50 years and standard deviation 5 years, in the research study area. Age group plays an important role on income generating and adoption technology of Banana.

Table 2: Distribution of the farmers according to educational qualification

Education	Frequency	Percent
Illiterate	24	20.0
Up to primary	14	11.7
High School	19	15.8
Intermediate	31	25.8
Graduate and above	26	21.7
Total	120	100.0

Table 2: shows the distribution of the farmers according to the educational qualification. It is found that 25.8% of farmers were educated up to intermediate, and 21.7% of banana cultivators were educated up to graduate and above level whereas 20.0% of banana cultivators were found to be illiterate. 15.8% of farmers were educated up to high school. 11.7% of banana cultivators were educated up to primary level, in the research study area in Barabanki.

Education may also teach individuals to be more patient and help in gaining more and more knowledge in order to turn this qualification into money or getting more outcomes.

Table 3: Distribution of the farmers according to total area of orchards.

Orchard Area	Frequency	Percent	Mean ± SD
Up to 2 acre	40	33.3	1±0.4
2 to 5 acre	66	55.0	2.6 ± 0.7
5 and above	14	11.7	6.1 ± 1.3
Total	120	100.0	2.5 ± 1.7

Table 3: shows the distribution of the farmers according to having total area of orchards. 55.0% of the respondent were belong to the orchard area 2-5 acre with the mean orchard area 2.6 and standard deviation 0.7 Followed by 33.3% of respondent were belongs up to 2 acre with the mean orchard area 1.0 and standard deviation 0.4 In the study area Barabanki. Only 11.7% of farmers were belong to the orchard area 5 acre and above with the mean orchard area 6.1 and standard deviation 1.3 and overall mean orchard area of the farmers were found to be 2.5 and standard deviation 1.7 in the research study area.

Table 4: Distribution of the farmers according to if know, spacing between trees in your orchards-

If know, Spacing between trees	Frequency	Percent
1.4 x 1.4	4	3.3
1.5 x 1.5	15	12.5
1.6 x 1.6	27	22.5
1.7 x 1.7	20	16.7
1.8 x 1.8	10	8.3
1.8 x 3.6	8	6.7
2 x 3	20	16.7
4 x 4	13	10.8
5 x 5	3	2.5

Table 4: table reveals that knowledge of adoption on production and productivity of banana in spacing between trees. 22.5% of cultivators have knowledge about 1.6× 1.6 spacing between the trees yield of banana followed by 16.7% of respondent know about 1.7×1.7 and 2×3 spacing between trees of banana respectively 12.5% of cultivator have a knowledge about 1.5×1.5% spacing whereas 10.8% of cultivators know 4×4 spacing between trees in the orchard of banana 8.3% of respondent have a knowledge of the banana trees spacing trees spacing 1.8×1.8 meter while 6.7% have a knowledge about 1.8×3.6 meter spacing between the trees of banana minimum 3.3% of cultivators have a knowledge and adopted a technology about spacing 1.4×1.4% and 5×5 respectively in the orchard of study area.

Table 5: Distribution of the farmers according to number of months to obtain economic yield

Required months for economic yield	Frequency	Percent
14 months	3	2.5
15 months	28	23.3
16 months	47	39.2
17 months and above	42	35.0
Total	120	100.0

Table 5: depicts the number of months to obtain economic yield, according to the farmers. 39.2% of the trees take 16 months to obtain economic yield, while 35.0% of the trees take 17 months and above more to obtain economic yield, whereas 23.3% of the trees take 15 months to obtain economic yield and 2.5% of the trees take 14 months and more years to obtain economic yield of the study area.

Conclusion

From the analysis it can be deducted that agricultural information is highly required among a majority of farmers in the study area. Agriculture as a primary sector continues to play a dominant role in increasing the growth and development of Indian economy and it is important to revitalize the agricultural sector. The majority of the banana growers possessed medium level of knowledge, impact of technology adoption and attitude of banana cultivation. They should be facilitated with technical know-how and motivate them to participate in the extension activities to rise the knowledge and adoption of recommended banana cultivation technology. The farmers know about the techniques which are

useful for them and getting benefit but in some cases farmers have money for investing but they do not have proper knowledge how to invest their money. There is lack of proper harvesting technique knowledge how to invest their money. There is lack of proper harvesting technique knowledge in corporate production loss due to mis-handling and unavailability of cold storage. Spacing between plants should be carefully done for the better production and preventing pest and disease spreading over the orchards through trees to trees which are in contact with each other through leaves due to lack of proper spacing. There is a need to proactively manage the two way movement and coordination of goods, services, information and funds to exploit the potential that is already available for the Indian banana domestically and internationally.

Recommendation and suggestion

1. To promote new gain varieties and technology by the training institution.
2. Farmer should be aware for proper spacing of plants.
3. Banana growing area should have facilities of transportation for going to fruits market; Government should be provided storage facilities for wholesalers and retailers.

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