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Agronomic Techniques: A Means Of Enhancing Farmers' Technical Expertise

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ABSTRACT:

During the height of the green revolution, Punjab was a shining example of agricultural success. In Punjab, Agriculture is the only main serving sector that owes people bread and butter. However, Numerous risks associated with crop protection and production are present in the agricultural sector. However, improving this significant industry can be facilitated by timely information. The research paper mainly covers the agronomic practices followed by farmers of 6 villages in term of cropping system, varieties sown, methods of sowing, weeding, fertilizer used and straw management. In this context, Data was collected from 6 different villages of district Rupnagar and Fatehgarh Sahib of Punjab State. The data was collected through an interview schedule from 100 randomly selected respondents. For the interview schedule, A questionnaire was prepared. The findings of the study showed that as a whole, The major cropping system followed by the farmers is wheat-paddy. After studying, it had been also revealed that most of the farmers sow same varieties of seeds of crops and followed chemical method of weeding. On deep studying, It has been revealed that there is a need to get farmers aware about the benefits of following various other cropping system like double cropping, crop rotation, inter cropping, etc which helps to sustain or maintain the soil fertility of their land. Farmers need to be introduced to biochemicals, biopesticicdes and bioinsectices as well as proper doses to be applied in the field for fertilizers.

Keywords: agronomic practices, farmers, cropping system, Variety

INTRODUCTION:

India as a whole is a huge fan of Punjab Agriculture. Farming and plantations are Punjab's most famous features. Due to the land's ideal cropping conditions, agricultural activities have taken up a large portion of Punjab's land area. Since the start of the Green Revolution, Punjab's agriculture has significantly improved. Both the state's and the nation's economies have clearly changed as a result of this. Through a number of services, the state of Punjab has supported the growth of the agricultural sector, which will also benefit the state's economy. Agronomic management is the most important input for getting potential yield and high net returns in any crop or crop sequence. Rice-wheat is the most predominant cropping system of the northern plains of India (Dinesh kumar singh et.al., 2014)[1].To obtain high yield, effective crop management practices, which are otherwise known as cultural practices, appeared to be of paramount value (Karaye A. K., 2017)[2]. Agricultural technology transfer plays an important role towards uplifting agricultural productivity and simultaneously country's economic status.

Lack of awareness can hinder the adoption of latest technologies (Siddiqui, 2006)[3]. Quick and timely availability of information can be valuable to its ultimate users (Morrow et al., 2004)[4] whereas delayed information may be of a little use to them and cannot give the desired results (G.A. Mohammad, 2013)[5].

Most of the farmers used to grow old varieties of rice and wheat without any row arrangement. Fertilization is mainly limited to nitrogenous fertilizer only. Due to heavy depletion of plant nutrients, soils and the system show signs of fatigue (Singh et al. 2014)[6]. Therefore, the research was conducted to carry out the information regarding the farmers knowledge of growing crops, choice of crop, variety, methods to be used for growing, when to grow, how to grow, harvesting, weeding, fertilizer and pesticide use, doses to be applied, etc. This study mainly focuses on the farmers awareness regarding agronomic practices to be followed and new interventions taking place in modernization of agriculture productivity.

MATERIALS AND METHODS

The research was carried out at Chandigarh University nearby villages namely, Chotti Mandauli, Rattan Garh, Ramgarh Manda, Badwali, Bhateri, Bari Mandauli coming under district Rupnagar and Fatehgarh Sahib. All the students were split into 5 groups , each group having 4-5 students. Total of 100 farmers were randomly surveyed by conducting an interview schedule and a questionnaire was also prepared through which the data was collected. The questionnaire contain all the information to be collected regarding agronomic practices. Classes with a predetermined format were organized to prepare the survey's questionnaire and gather information on the study's goals. This survey and the complete data collection took place under RAWE programme. Each student need to interact with 25 farmers. The collected data was analysed using frequency and percentage. The prepared questionnaire contains the information regarding socio-economic profile of the farmer, agronomic practices and plant protection methods.

RESULTS AND DISCUSSIONS

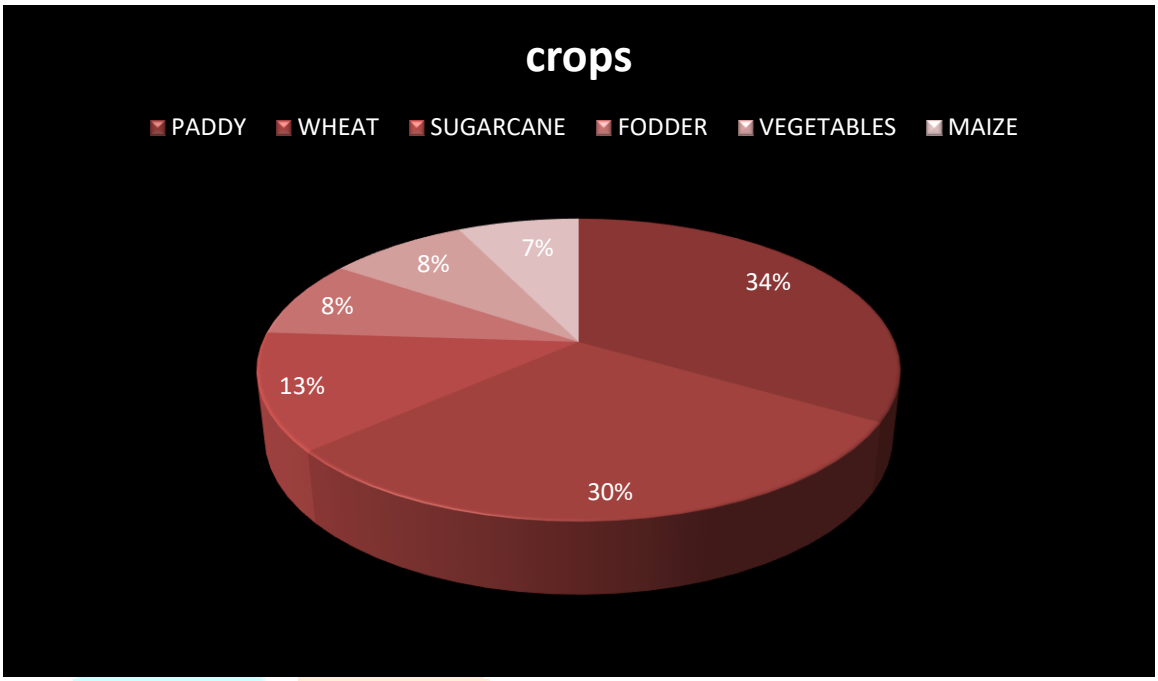
Cropping pattern

The crop choices among farmers are evident, with a significant 29% opting for wheat cultivation and an even higher percentage, 32%, dedicating their fields to rice. Additionally, 8% cultivate sugarcane, 8% grow vegetables, and 7% focus on maize and others by 4% of the farming community as sown in (table -1) & (fig-1.1).

CROPS	Village 1 (n=10)	Village 2 (n=12)	Village 3 (n=24)	Village 4 (n=18)	Village 5 (n=16)	Village6 (n=20)	OVERALL % (N=100)
PADDY	3	3	7	6	7	6	32%
WHEAT	4	3	6	6	4	6	29%
SUGARCANE	0	1	2	2	3	4	12%
FODDER	1	0	3	1	1	2	8%
VEGETABLES	1	2	2	2	0	1	8%
MAIZE	0	2	2	1	1	1	7%
OTHERS	1	1	2	0	0	0	4%

Table 1

Figure 1.1



Seed varieties grown

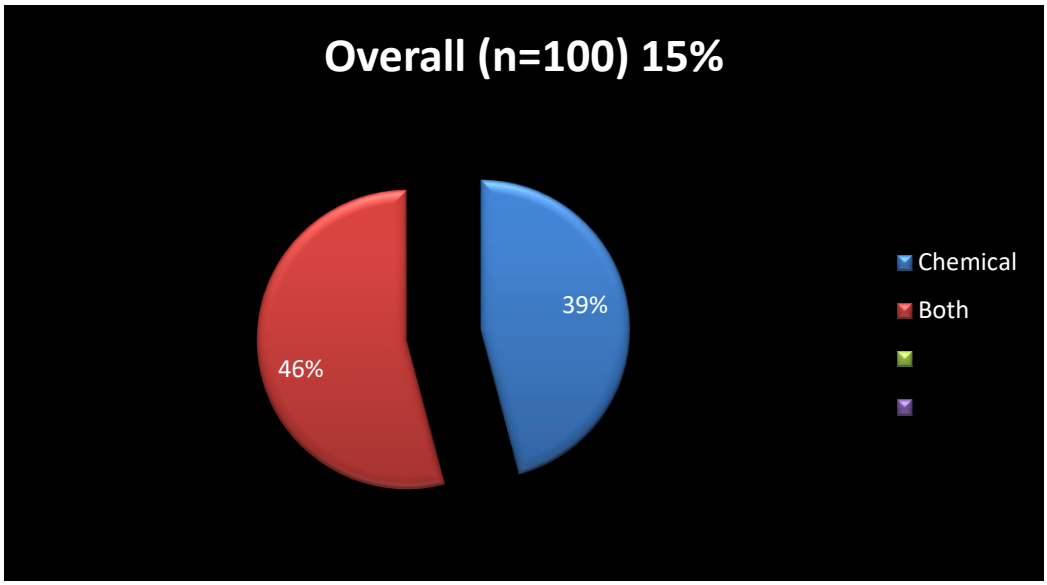
About paddy

Among the data collected from 100 farmers, 45% farmers grow PR-126, 28 % farmers cultivate PR-127, 16% cultivate PR-130 and 11% farmers engage in BASMATI RICE-1121.

Table 2

PADDY VARITIES	Village 1 (n=10)	Village 2 (n=12)	Village 3 (n=24)	Village 4 (n=18)	Village 5 (n=16)	Village 6 (n=20)	OVERALL% (N=100)
BASMATI RICE-1121	2	2	5	1	0	1	11%
PR-127	4	2	6	6	4	6	28%
PR-130	1	2	5	4	1	3	16%
PR-126	3	6	8	7	11	10	45%

Figure 2.1



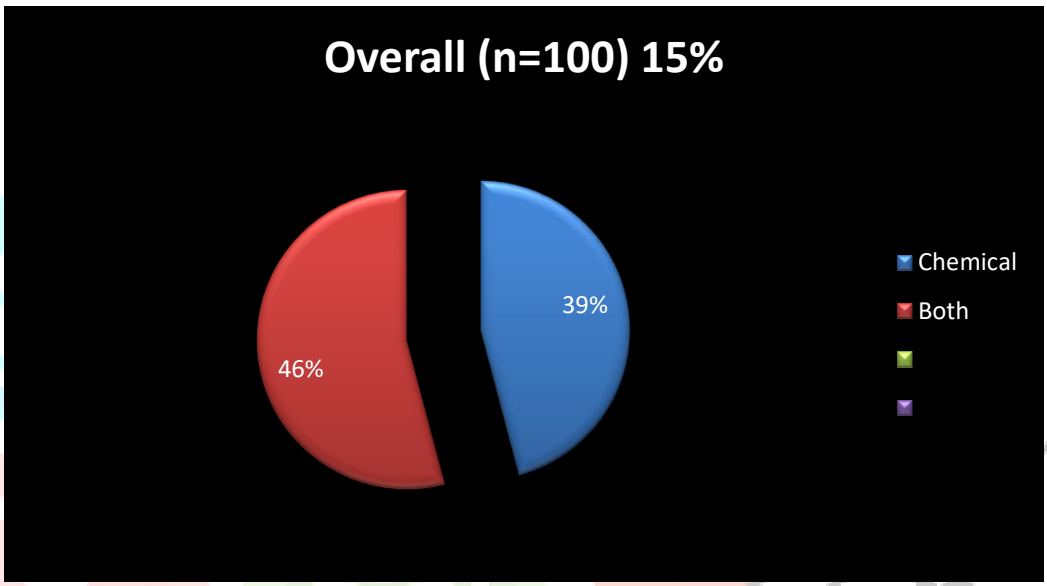
About wheat

From the data out of 100 farmers, 31% engage in ND-2967, 31% farmers cultivate PBW-125, 14% farmers grow D&W-18, and rest, 8% grow ND-3086.

Table 3

WHEAT VARITIES	Village 1 (n=10)	Village 2 (n=12)	Village 3 (n=24)	Village 4 (n=18)	Village5 (n=16)	Village 6 (n=20)	OVERALL% (N=100)
ND-2967	6	7	8	7	8	11	47%
ND-3086	1	0	5	1	0	1	8%
D&W-187	1	1	5	4	1	2	14%
PBW-125	2	4	6	6	7	6	31%

Figure 3.1



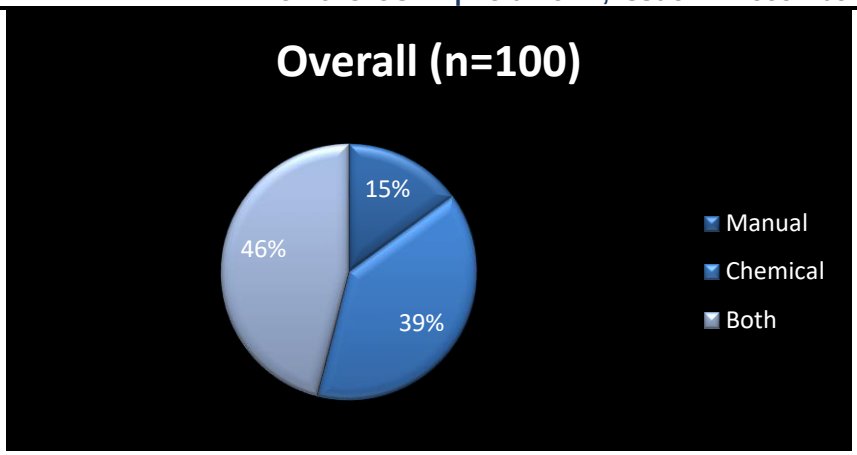
Weeding

Weeds, unplanned plants that sprout in fields without deliberate planting, present a challenge as they compete with the main crop for sunlight, nutrients and space.it is essential to employ effective weed management to maximize the yield and productivity of agricultural produces.by the survey I came to know (Table-4).

Table 4

WEEDING	Village 1 (n=10)	Village 2 (n=12)	Village 3 (n=24)	Village 4 (n=18)	Village5 (n=16)	Village 6 (n=20)	OVERALL% (N=100)
MANUAL	2	2	4	3	2	2	15%
CHEMICAL	3	6	9	6	5	10	39%
BOTH	5	4	11	9	9	8	46%

Figure 4.1



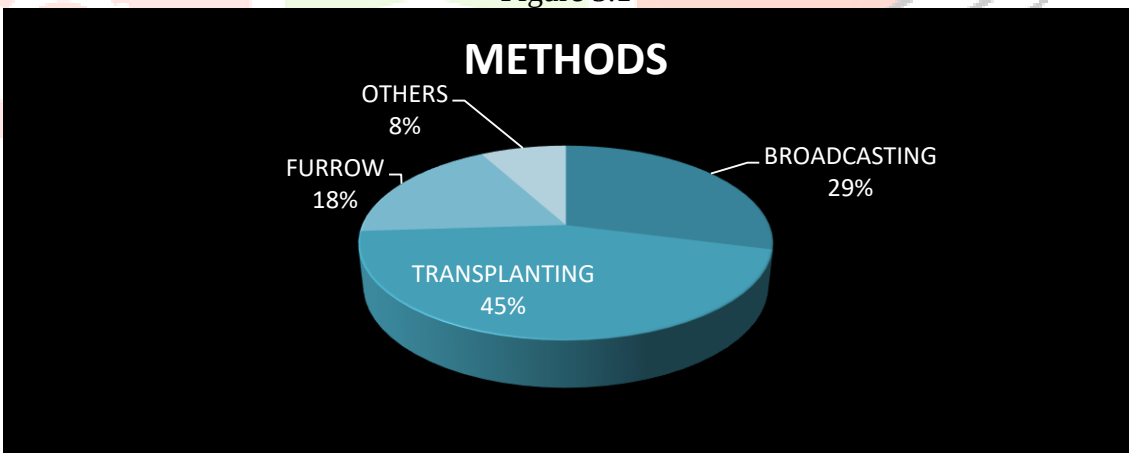
Method of sowing

Farmers in these villages employ various sowing methods tailored to the specific crops they cultivate. According to the survey findings, approximately 29% of farmers opt for the broadcasting method, which is commonly used for crops like wheat and paddy. For rice cultivation, about 45% of farmers prefer the transplanting method. The furrow method, suitable for crops like sugarcane and potatoes, is adopted by 18% of farmers. Conversely, only 8% of farmers employ alternative methods such as dibbling or drilling for their sowing needs. This diversity in sowing techniques reflects the adaptability of local farmers to different crops and their corresponding requirements.

Table 5

METHODS	Village 1 (n=10)	Village 2 (n=12)	Village 3 (n=24)	Village 4 (n=18)	Village5 (n=16)	Village 6 (n=20)	OVERALL% (N=100)
BROADCASTING	3	4	7	4	4	7	29%
TRANSPLANTING	5	4	11	8	7	10	45%
FURROW	1	3	4	4	4	2	18%
OTHERS	1	1	2	2	1	1	8%

Figure 5.1



Fertilizer dose

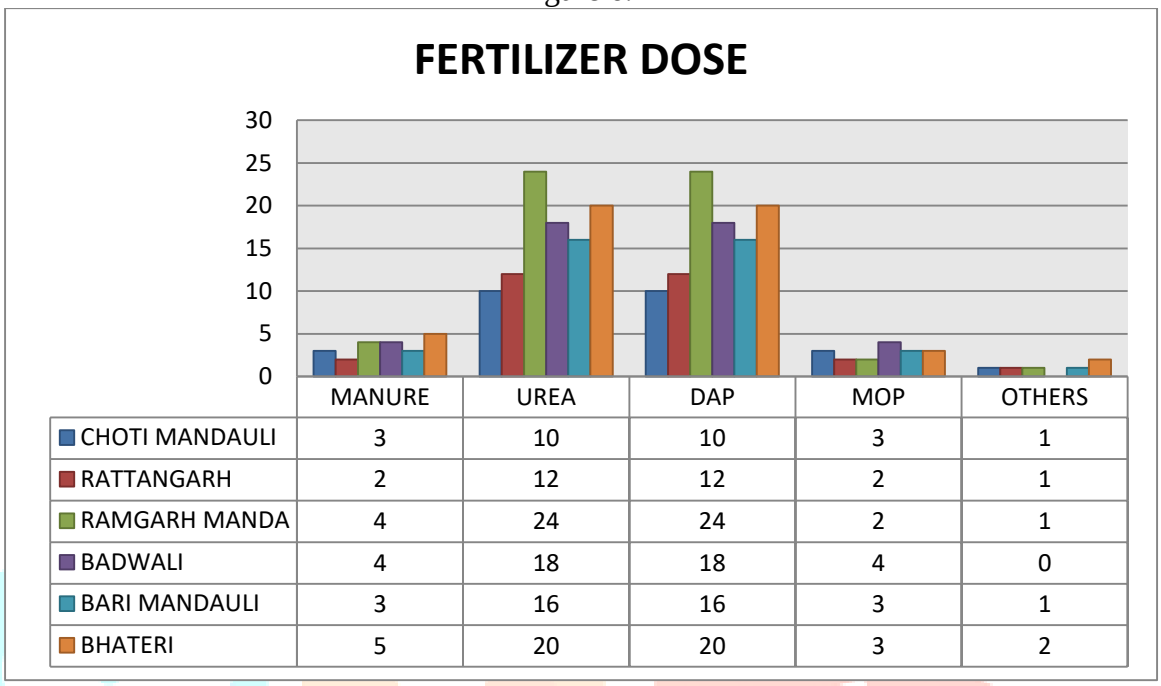
The survey results indicate that 21% of interviewed farmers employ a combination of organic manure and chemical fertilizer .Additionally ,all farmers surveyed rely on urea and DAP, while 17%utilize MOP, and 6% opt for various other chemical fertilizers.

Table 6

FERTLILIZER	Village 1 (n=10)	Village 2 (n=12)	Village 3 (n=24)	Village 4 (n=18)	Village5 (n=16)	Village 6 (n=20)	OVERALL% (N=100)
MANURE	3	2	4	4	3	5	21%
UREA	10	12	24	18	16	20	100%
DAP	10	12	24	18	16	20	100%
MOP	3	2	2	4	3	3	17%

OTHERS	1	1	1	0	1	2	6%

Figure 6.1



Conclusion

The document provides insights or information about the current circumstances and well-being of farmers in Ropar. The crop cultivation pattern reveals a predominant focus among farmers, with 29% engaging in wheat cultivation, 32% in rice, 12% in sugarcane,8% in fodder,7% in maize ,8% in vegetables, and 4% in other crops .most common paddy varieties are grow in villages is PR-126 and wheat ND-2967.maximum farmers use both chemical and manual method for weed management , approximately 29% of farmers opt for the broadcasting method, which is commonly used for crops like wheat and paddy. For rice cultivation, about 45% of farmers prefer the transplanting method, and all farmer use urea and DAP as fertilizer dose. The study also examines the influence of agricultural diversification on farm income. The findings highlight a recommendation to encourage the involvement of farmers, especially women, in agricultural training.

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