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Impact of training on improving agricultural productivity of adopted village under MGMG programme

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ABSTRACT

Imparting training for capacity building and up scaling of technical knowhow is the fastest way to improve productivity. Investment on human resources development is the key for sustainable development. Present study conducted in sleeted villages under Mera Gaon Mera Gaurav (MGMG) programme, confirms that scientific and systematic training has potential to improve productivity not only trained personnel but also the agriculture production. Training imparted on scientific rice production has significant yield advantage in all the villages and overall 14.4 per cent increase in yield were estimated as compare to what yield has been estimated before imparting this training to the farmers of selected villages. Likewise, in case of wheat 14.0 per cent yield advantage were estimated due to significant impact of training. Similar types of results were also reported in all the crop based training programme executed to the farmers of the villages. In case of mustard13.5 per cent yield increase was notice owing to training imparted to the targeted farmers. 10.3 per cent and 14.6 per cent yield advantage has been estimated in case of lentil and summer nung bean only because of scientific training and time to time proper need based guidance received from scientist. Apart from imparting training, for sustainable agricultural/ crop production, uninterrupted electricity, availability of quality seeds and planting materials as well as transport facility, credit and extension services are needs of hour to boost agriculture production in the selected villages.

KEYWORDS

Training, MGMG, Impact, Yield gap, Training gap

INTRODUCTION

Mera Gaon Mera Gaurav (MGMG) programme is a mega initiative by the ministry of agriculture and farmers welfare towards speedy development of the selected backward villages. For sound planning and efficient execution of project in the five selected villages information pertaining to agriculture and allied sector has been collected (Singh et al., 2018 and Singh *et al.*, 2019). Up scaling of knowledge and skill through imparting training and owing to these positive changes occurred in the attitudes of participant trainees are the most important factors affecting socio personal attributes of human resources, which will not only improve their outlook but also help in improving their analytical and reasoning power (Annonymus, 2006). As we know that the main challenges of research and development are to bridge the gap between actual and attainable yield by enhancing farmers access to quality seed, fertilizers, plant protection measures, improved technologies and information's. Front line demonstrations are one of the practical approaches to maximize the production by display of relevant technologies at farmers' field under strict supervision of agricultural experts helped to narrow down the extension and technological gaps to a considerable extent (Singh *et al.*, 2018). Organizing and imparting training with an objective to develop more skilled workforce is key to sustainable development in all sphere of life. Majority of Indian farmers are small and marginal type having very less agricultural land holding hence, participation of small and marginal farmers in Indian agriculture is very important. Small farmers put forth their desire on various forums to have timely information on investment in agriculture, loans, availability of other basic amenities, market rates, extension activities and facilities provided by different agencies, new research findings and technologies, etc (Singh *et al.*, 2018).

It is worth to mention here that the constraints faced by the farmers were varied as per season and crop and as well as it was notice that it was even different for different technologies. To enhance the production and productivity of agricultural crop, strategy should be made for getting the more and more recommended technologies adopted by the farmers, if possible with proper training and demonstration as well. Therefore efforts should be made by the extension agencies in their transfer of technology programme to consider the constraints/ challenges faced by the farmers.

Since all five villages were endowed with plain topography, type I soil, equipped with irrigation facilities, and very near to city any crop can be grown with ease. Our survey and interaction with the farmers confirm that the important crops of all the five villages are rice, wheat, lentil, mustard and, mung bean. Area under crop during *Rabi* season is more what they are cultivating during Kharif season. Lack of assured irrigation and blue bull menace are limiting factor for summer cultivation. (Singh *et al.*, 2019). To enable optimum utilization of their potential, in the aspiration / selected villages, under "Mera Gaon Mera Gaurav" has been planned to promote the direct interface of scientists with the farmers (Singh *et al.*, 2018). With an objective to improve productivity of major crop of selected villages trainings were imparted and direct benefits in terms of improvement in the crop production were evaluated.

MATERIALS AND METHODS

To know the present status of technical knowhow about major agricultural activities in the selected five villages namely Chainpur, Aima Vishanpur, Jiyan

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Khurd, Parri and Mohamadpur Aima, two days' visit were undertaken during 15-16 January, 2016. These five villages were selected from Marwan community development block of Muzaffarpur District of Bihar State; India and was selected during two days' visits undertaken during 26-27 September, 2015 (Singh *et al*., 2018). Questioner has been developed for the purpose Based upon personal interactions and recommendation of resident villagers, five key informants were selected from each village selected under this scheme, and relevant information has been gathered (Sharma and Singh, 2016).

Fig.1: Imparting training to the participant farmers of selected village

Discussion with key informants of respective villages, we asked about major crops grown during *Kharif, Rabi* and *summer* seasons, their approximate area under different major crops, important varieties, productivity, and major problems during particular season. Rice, wheat, toria /mustard maize moong, sorghum fodder are the major or important crops of during Kharif, *Rabi* and summer season respectively (Singh *et al*., 2018).

Based upon their responses, training needs of the farmers of the selected five villages were identified and accordingly training progammes were chalked out. It was found that there are urgent needs to provide training on scientific production technology especially rice, wheat, lentil, mustard and summer mung bean. These three training were planned and executed well before start of respective season and was undertaken during pre *Kharif* pre *Rabi* and pre summer, with an aim to get better output of major commodity of targeted villages. The impacts of trainings imparted were evaluated in terms of improvement in the crop production. After training, our team was regular in touch with the respective village representatives / progressive farmers, with a regular reminder to note down the yield of particular crop under our guidance/ supervision. To know the impact or influence of training or level of adoption of technology / impact of training were evaluated. For the purpose individual crop yield data were collected from the progressive frames.

The collected data were calculated and analyzed to draw the inference. Based on information received has been pooled and average for the particular village. These data were used to study the training gap between the potential yield and demonstrated yield, extension gap between demonstrated yield and yield under existing practice. The Percent increase yield and Training gap, (Singh *et al*., 2020) were calculated by using following formula as given below

$$\text{Percent increase yield} = \frac{\text{Yield after imparting training - yield before imparting training}}{\text{Yield before imparting training}} \times 100$$

Training gap = yield after imparting training - yield before imparting training

RESULTS AND DISCUSSION

To achieve the one of the major objectives of Mera Gaon Mera Gaurav (MGMG) of selected villages are to improve the productivity of their major crops.

Improvement in rice productive through imparting training

During *Kharif* season major crop of all the villages were rice, it was estimated that before imparting training overall average rice productivity of all the five villages were stood to 2911.4 kg/ha. With minimum average productivity of 2873 kg/ha in village Mohamadpur Aima and maximum was estimated 2958 kg/ha in village Chainpur. After imparting training and proper supervision, overall 14.4 percent yield increase was estimated (Table 1). Framers of Jiyan Khurd village were more innovative and recorded maximum yield gain (489 kg/ha) obviously due to imparted training. Overall average training gap was recorded 418.6 kg/ha. Highest estimated rice yield (3350 kg/ha) has been harvest by none other than village Jiyan Khurd. Above results are a very encouraging and proof of role of training in improving agricultural productivity through imparting training.

Table 1: Improvement in the rice production after imparting training in the selected village under Mera Gaon Mera Gaurav programme

Village Name	Yield before imparting training (kg /ha)	Yield after imparting training (kg /ha)	Percent yield increase	Training gap (kg /ha)
Chainpur	2958	3350	13.3	392
Aima Vishanpur	2891	3350	15.9	459
Jiyan Khurd	2911	3400	16.8	489
Parri	2924	3300	12.9	376
Mohamadpur Aima	2873	3250	13.1	377
Average	**2911.4**	**3330**	**14.4**	**418.6**

Improvement in wheat productive through imparting training

Wheat is very important cereal crops of *Rabi* season in the all selected villages area under wheat were estimate more than rice in the entire village, owing to extension of irrigation facilities in all the villages. Results revealed that training provided to the farmers has very positive influence on yield of wheat. Overall average wheat productivity before imparting training, of all the five villages were estimated to 3304.6kg/ha. With minimum average productivity of 3192 kg/ha in village Mohamadpur Aima and corresponding maximum was estimated 3458 kg/ha in Aima Vishanpur village. After imparting training and proper supervision and guidance, overall 14.0percent yield increase was estimated (Table 2 and Fig. 2) for all the village, however framers of Parri village were more innovative and recorded maximum yield gain (553 kg/ha) showing clear-cut impact of training on improving wheat crop productivity. Overall average training gap was recorded 461.4kg/ha. Highest estimated wheat yield (38400 kg/ha) has been produced by none other than village Aima Vishanpur.

Improvement in mustard productive through imparting training

Mustard is one of the important sources of vegetable oil (fatty acids) during winter *Rabi* seasons in most of North India states. Mustard is grown in all five villages mainly for domestic/self consumption. Perusal of data presented in table 3, vindicates that overall average mustard productivity before imparting training, of all the five villages were estimated to 1097.2 kg/ha. With minimum average productivity of 1010 kg/ha in village Aima Vishanpur and corresponding maximum was estimated 1125 kg/ha in Jiyan Khurd village. After imparting training and proper supervision and guidance, overall 13.5 percent yield increase was estimated (Table 3 and Fig.3) for all the village, however framers of

Table 2: Improvement in the wheat production after imparting training in the selected village under Mera Gaon Mera Gaurav programme

Village Name	Yield before imparting training (kg /ha)	Yield after imparting training (kg /ha)	Percent yield increase	Training gap (kg /ha)
Chainpur	3285	3750	14.2	465
Aima Vishanpur	3458	3840	11.0	382
Jiyan Khurd	3374	3790	12.3	416
Parri	3214	3750	16.7	536
Mohamadpur Aima	3192	3700	15.9	508
Average	**3304.6**	**3766**	**14.0**	**461.4**

Table 3: Improvement in the mustard production after imparting training in the selected village under Mera Gaon Mera Gaurav programme

Village Name	Yield before imparting training (kg /ha)	Yield after imparting training (kg /ha)	Percent yield increase	Training gap (kg /ha)
Chainpur	1120	1325	18.3	205
Aima Vishanpur	1010	1130	11.9	120
Jiyan Khurd	1125	1275	13.3	150
Parri	1120	1260	12.5	140
Mohamadpur Aima	1115	1245	11.7	130
Average	**1098**	**1247**	**13.5**	**149**

Fig. 2: Wheat production after imparting training in the selected village

Fig.3: Mustard production after imparting training in the selected village

Improvement in lentil productive through imparting training

Lentil is one of the important pulse crop cultivated during *Rabi* seasons in most of North India state. It is one of cheap sources of vegetable protein for vegetarian population, and most of the resident of selected villages are by and a large of vegetarian in their dietary habit. Lentil is being is grown in all five villages mainly for domestic/self consumption purposes. Perusal of data presented in table 4, indicates that overall average lentil productivity before imparting training for all the five villages were estimated to 1012 kg/ha. With minimum average productivity of 975 kg/ha in village Chainpur and corresponding maximum was estimated 1050 kg/ha in Parri village. After imparting training and proper supervision and guidance, overall 10.3 percent yield increase was estimated (Table 4 and **Fig.4**) for all the village, however framers of Chainpur village were more innovative and recorded maximum yield gain (145 kg/ha) showing clear-cut impact of training on improving wheat crop productivity. Overall average training gap was recorded 104 kg/ha. Highest estimated lentil yield (1125 kg/ha) has been recorded in village Aima Vishanpur.

Fig.4: Lentil production after imparting training in the selected village

Table 4: Improvement in the lentil production after imparting training in the selected village under Mera Gaon Mera Gaurav programme

Village Name	Yield before imparting training (kg /ha)	Yield after imparting training (kg /ha)	Percent yield increase	Training gap (kg /ha)
Chainpur	975	1120	14.9	145
Aima Vishanpur	1015	1125	10.8	110
Jiyan Khurd	1020	1100	7.8	80
Parri	1050	1120	7.0	70
Mohamadpur Aima	1000	1110	11.0	110
Average	**1012**	**1116**	**10.3**	**104**

Improvement in mung bean productive through imparting training

During summer mung bean is one of the important pulse crop now gaining popularity in rice –wheat best in Indo-Gangetic belt of India, under assured irrigated condition. Mung bean is being is cultivated in all five villages mainly for self consumption purposes. Data presented in table 5rrevealed that the overall average mung bean productivity before imparting training for all the five villages were estimated to 960 kg/ha. With minimum average productivity of 925 kg/ha in village Chainpur and corresponding maximum was estimated 1000 kg/ha in Mohamadpur Aima village. After imparting training and proper supervision and guidance, overall 14.6percent yield increase was estimated (Table 54) for all the village, however framers of Parri village were more adoptive and recorded maximum yield gain (175 kg/ha) showing clear-cut impact of training on improving wheat crop productivity. Overall average training gap was recorded 140 kg/ha .However, after training, highest estimated mung bean yield (1125 kg/ha) has been produced by none other than village Parrir. Mung bean is very short duration crop during summer season as compare to Kharif grown crop. However despite of neumerous advantages, the major hurdle of cultivation of this crop during summer is animal garaging and blue bull menace.

Table 5: Improvement in the mung bean production after imparting training in the selected village under Mera Gaon Mera Gaurav programme

Village Name	Yield before imparting training (kg /ha)	Yield after imparting training (kg /ha)	Percent yield increase	Training gap (kg /ha)
Chainpur	925	1050	13.5	125
Aima Vishanpur	975	1120	14.9	145
Jiyan Khurd	950	1100	15.8	150
Parri	950	1125	18.4	175
Mohamadpur Aima	1000	1100	10.0	100
Average	**960**	**1100**	**14.6**	**140**

CONCLUSION

Imparting need based training produces significant and positive results in the improvement in the crop productivity and production prove times and again that, up scaling of farmers knowledge and capacity building through improving technical know-how is quickest possible way to improve agricultural production. This work has provided the researcher a unique opportunity to demonstrate the productivity potential and profitability of the latest technology under real farming situation, which we have been advocating for long time. The productivity gain in the respective crop/ commodity due to scientific production of crop owing to training, over existing practices of crops has created greater awareness and motivated to the other farmers to adopt suitable production technology in the district. Horizontal spread of improved technologies might be achieved by the successful implementation of training and various extensions activities.

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