YIELD GAP ANALYSIS OF RICE FOR TECHNOLOGICAL INTERVENTION

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INTRODUCTION
Rice (Oryza sativa L.) occupies an enviable prime place among the food crops cultivated around the world. Rice production in India is an important part of the national economy as it is considered as the staple food for most of the people of our country and forms the daily bread of more than three billion people around the world. In India, rice is cultivated in 44.6 million hectares with a total production of 96 million tonnes and ranks next to China (Balakrishna and Satyanarayana 2013; Chowdhury et al., 2014). To meet the demands of ever increasing population and maintenance of self sufficiency, the present production level needs to be increased up to 120 million tonnes by the year 2020. The production can be increased vertically without expansion of area under rice.

In United Andhra Pradesh, rice is grown in 22 districts and among them 14 districts falls under high productivity group, i.e. yields more than 2500 kg/ha. Five districts falls under medium productivity group i.e. yields in the range of 2000 to 2500 kg/ha. Two districts falls having medium to low productivity i.e. yields in the range of 1500 to 2000 kg/ha. Only one district is under low productivity i.e. yields in the range of 1000 to 1500 kg/ha. Mahabubnagar district is falling under medium productivity group with an average yield of 2123 kg/ha (Siddiq, 1999).

Farmer’s productivity of rice in the district is far lower than the potential yields of improved rice varieties. Hence frontline demonstrations were initiated with an objective to increase the productivity of rice through popularization of improved production technologies and to find out the extension gap, technology gap and technology index.

MATERIALS AND METHODS
The present investigation was carried out by Krishi Vigyan Kendra, Palem during kharif 2011 and rabi 2011-12 in the farmers’ fields of five adopted villages namely Madharam, Weepangandla, Nallavelli, Peddadagada and Kottalagadda of Mahabubnagar district.

During these two seasons of study, an area of 10 ha was covered with plot size of 0.4 ha under frontline demonstration with an active participation of 40 farmers. As suggested by Sagar and Ganesh Chandra (2003) before conducting the front line demonstrations, meeting was conducted in each village and interested farmers list was prepared. Specific skill training was imparted to the selected farmers regarding different aspects of cultivation. The packages of demonstration and existing farmers’ practices are presented in the Table 1. The soils under study were sandy clay loam in texture with pH ranging from 6.8 to 7.9. The available nitrogen, phosphorus and potassium ranges from 160-248, 32-46 and 202-298 kg/ha, respectively. In all the demonstration plots, quality seed was used, optimum plant population was maintained, proper and timely weed management and

ABSTRACT
Frontline demonstrations were conducted in 40 farmers’ fields of five villages (Madharam, Weepangandla, Nallavelli, Peddadagada and Kottalagadda) of the Mahabubnagar district, Telangana during kharif 2011 and rabi 2011-12 to assess the performance of improved production technology in farmers fields to increase the productivity of rice and to bridge the gap between potential yield and farmers’ yields of rice. Treatments consisting of demonstration of the recommended package of practices against farmers’ practice (control). The average of two seasons data revealed that 16.5% higher grain yield of rice (7.01 t/ha) is recorded in demonstrations as compared to farmers’ practice (6.02 t/ha). The extension gap of 0.90 t/ha during kharif, 1.08 t/ha during rabi and with two seasons average of 0.99 t/ha was observed. The technology gap of 0.67 t/ha during kharif, 0.82 t/ha during rabi and with two seasons average of 0.75 t/ha was noticed. The technology index of 8.9% during kharif, 10.3% during rabi and with two seasons average of 9.6% was exhibited, which gives a clear indication that technology is highly viable for this region.

KEY WORDS
Extension gap
Frontline demonstration
Rice, Technological gap
Technological Index, Rice

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application of recommended dose of fertilizers at right time and in right method as well as need based plant protection measures were emphasized and comparison has been made with the existing farmers’ practice (Table 1). The necessary steps for selection of site, farmers and layout of demonstration etc. were followed as suggested by Choudhary (1999). The farmer’s practices were maintained in case of control. The frontline demonstration was conducted to popularize improved production technologies to improve the productivity of rice and to find out extension gap, technology gap and technology index.

In present evaluation study, the data on output of rice cultivation were collected from FLD plots, besides the data on farmers’ practice (Table 1). The necessary steps were emphasized and comparison has been made with the existing farmers’ practice (Table 1). The necessary steps for selection of site, farmers and layout of demonstration etc. were followed as suggested by Choudhary (1999). The farmer’s practices were maintained in case of control. The frontline demonstration was conducted to popularize improved production technologies to improve the productivity of rice and to find out extension gap, technology gap and technology index.

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In both the seasons, higher number of tillers/m² and panicles/m², longer panicles, more number of grains per panicle and higher test weight (1000 grain weight) were recorded in demonstrations than compared to control. This might be due to optimum seedlings per hill, balanced use of fertilizers in right field condition, effective weed management and proper water management resulting in better growth and yield parameters of rice (Table 2). The results are in corroboration with the findings of Sujathamma et al. (2013), Seema et al. (2014) and Mallikarjuna et al. (2014).

The data presented in Table 3 revealed that the grain yield of rice during kharif was 6.83 t/ha and during rabi was 7.18 t/ha and the average grain yield of two seasons is 7.01 t/ha in the demonstration plots. Demonstrations recorded 16.5 % higher yield over control (6.02 t/ha). The results are in conformity with the findings of Tomer et al. (2003) and Subash Katare et al. (2011). Significant increase in grain yield could be attributed to the fact that optimum utilization of all the production factors in the demonstrations accelerates photosynthesis resulting in better growth and yield parameters (Seema et al., 2014; Mallikarjuna et al., 2014). The results of the demonstrations clearly indicate the impact of FLDs over the farmers practices towards enhancing the yield of rice in Southern Telangana Zone of Andhra Pradesh.

The extension gap of 0.90 t/ha during kharif, 1.08 t/ha during rabi and with two seasons average of 0.99 t/ha was noticed. Extension gap emphasizing the need to educate the farmers through various means of communication for the adoption of improved agricultural production technologies to reverse the trend of wide extension gap.

The technology gap of 0.67 t/ha during kharif, 0.82 t/ha during rabi and with two seasons average of 0.75 t/ha was observed. The trend of technology gap shows the need of farmer's
cooperation to carry out such demonstrations with encouraging results in future. The technology gap observed may be attributed to the dissimilarity in soil fertility status. Similar findings were recorded by Mitra et al. (2010). The technology index of 8.9% during kharif, 10.3% during rabi and with two seasons average of 9.6%. The technology index showed the feasibility of the evolved technology in the farmer’s fields. Lower the value of technology index means higher the feasibility of technology (Mitra et al., 2014; Sagar and Ganesh Chandra, 2003).

From the above findings, it can be concluded that the use of scientific methods of rice cultivation can reduce the technology gap to a considerable extent thus leading to increased productivity of rice in the district. Moreover, extension agencies in the district need to provide proper technical support to the farmers through different educational and extension methods to reduce the extension gap for improving productivity of rice in the district.

REFERENCES


APPLICATION FORM
NATIONAL ENVIRONMENTALISTS ASSOCIATION (N.E.A.)

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Ranchi-834002, Jharkhand, India

Sir,
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