SUMMARY AND CONCLUSION

The present experiment entitled “Performance of wheat along with mustard intercropping in relation to row ratio and fertility levels” was conducted during rabi seasons of 2009-10 and 2010-11 at crop research farm of the Department of Agronomy, Sam Higginbottom Institute of Agriculture, Technology and Sciences, Deemed to be University, Allahabad, in factorial randomized block design consisting of fourteen treatment combinations and three replications, the treatments consisted of different row ratio (4:1, 8:2 and 12:3) with four levels of fertility (100%+100%, 100%+75%, 100%+50% and 100%+25%) recommended dose of fertilizer for wheat as well as intercrop. The experiment was aimed to study the effect of crop components on each other. The pre and post –harvest observations were recorded on the crops to draw valid results and conclusion which are summarized as under:-

Application of different levels of fertilizer did not affect the germination of the crop.

1. Maximum plant dry weight, number of effective tillers/hill, crop growth rate, relative growth rate, leaf area index, days to 50% spikelet initiation, spike length, number of effective spikelet/spike, weight of single spike/plant, number of grains/spikes, grain yield, straw yield, test weight, harvest index and wheat equivalent yield were observed in wheat+ mustard 12:3 row ratios followed by wheat+ mustard 8:2 row ratios. The highest value of these parameters was recorded by fertility levels of 100% (wheat) + 50% (mustard) RDF, but some parameters were statistically at par with fertility levels of 100% (wheat) + 25% (mustard) RDF.

2. Significantly maximum plant height, plant dry weight, number of branch/plant, crop growth rate, relative growth rate, leaf area index, number of siliqua/plant, length of siliqua, number of seed/siliqua, test weight, harvest index, seed yield, straw yield and oil content (%) of mustard were observed in wheat+ mustard 8:2 row ratios followed by wheat+ mustard 4:1 row ratios. The highest value of these parameters was recorded by fertility levels of 100% (wheat) + 100% (mustard) RDF than fertility levels of 100% (wheat) + 75% (mustard) RDF.

3. Interaction effect, maximum plant height, dry weight per plant, number of effective tillers/hill, crop growth rate, relative growth rate, leaf area index, days to 50% spikelet initiation, spike length, number of effective spikelet/spike, weight of single spike/plant,
number of grains/spikes, grain yield, straw yield, test weight and harvest index of wheat were observed in wheat+ mustard 12:3 row ratios with fertility levels of 100% (wheat) + 50% (mustard) RDF followed by wheat+ mustard 12:3 row ratios with fertility levels of 100% (wheat) + 25% (mustard) RDF. Interactions, wheat+ mustard 8:2 row ratios with fertility levels of 100% (wheat) + 100% (mustard) RDF were found maximum plant height, dry weight per plant, number of branch/plant, crop growth rate, relative growth rate, leaf area index, number of siliqua/plant, length of siliqua, number of seed/siliqua, test weight, harvest index, seed yield, straw yield and oil content (%) of mustard followed by wheat + mustard 4:1 row ratios with fertility levels of 100% (wheat) + 100% (mustard) RDF.

4. Intercropping of wheat with mustard row ratios in land equivalent ratio greater than one indicating its advantage. Wheat + mustard 8:2 row ratios showed the greater biological efficiency (1.75) than wheat+ mustard 4:1 row ratios. Wheat+ mustard 12:3 row ratios gave lower LER (1.60), indicating less efficient. Wheat+ mustard 8:2 row ratios with fertility levels of 100% (wheat) + 50% (mustard) RDF gave the maximum net returns and B:C ratio, which was comparable with that obtained from wheat + mustard 8:2 row ratios with fertility levels of 100% (wheat) + 100% (mustard) RDF.

**CONCLUSION**

Based on two years study, it may be concluded that intercropping of wheat with mustard under row ratio of (8:2) and fertility level of 100%+50% RDF were found more remunerative and their combination were found to be most efficient economics.