

## ABSTRACT

Field experiments were carried out to evaluate relative efficacy of organic manures in improving productivity, pest tolerance and quality of rice and okra crops in lateritic soil. Three commercial manures viz., processed city waste (PCW), vermicompost (VC) and oil cake pellets (OCP) were assessed in relation to farmyard manure (FYM) alone and in combination with microbial culture (MC). These organic manures were also used in combination with chemical fertilizers (CF) to assess the usefulness of such treatments against application of only CF. Between the two crops, okra responded better than rice to the application of organic manures. Among the organic manures tested, FYM produced maximum grain and edible fruit yield of rice and okra respectively. Increase in crop yield with FYM application was attributed to higher retentivity of soils for water and nutrients, increased biological activity and higher recovery of major nutrients. The efficacy of FYM could be further enhanced by addition of microbial culture. PCW proved promising among the commercial manures and emerged as potential alternative to FYM since the grain yield of rice as well as the fruit yield of okra under these treatments were statistically comparable. Organic manures when applied at 50 per cent recommended N equivalent basis and balanced with chemical fertilizers to attain the recommended N, P and K levels, could produce higher yield than in case where CF alone were applied. Maximum resistance to pests and pathogens in terms of per cent affected hills/panicles/plants was observed in rice and okra when manured with VC. However, the tolerance of these crop-plants to attack by pathogens and pests in terms of grain and fruit yield was highest in the treatment with FYM. Compared to different treatments, the milling and cooking quality of rice and nutritional quality of okra also improved due to application of FYM. The quantity and the proportion of N, P and K coupled with minor elements available from nutrient sources at different stages of crop growth were mainly responsible for differences among nutrient sources. Varying influence of organic manures on soil properties also caused differences in the performance of nutrient sources. The nutritional quality and nutrient release pattern of different organic manures besides their quantity applied proved to be considerably important.