Impact of fertiliser application on yields of rainfed lowland rice

In rainfed lowland rice – such as that which covers large areas of the Mekong River Basin - the nutrient status of soils is often poor, and response to applied nutrients is often unreliable. Researchers from across Asia set out to understand these patterns of nutrient response, and to consider likely approaches for increasing and stabilising yields of rainfed lowland rice. Researchers working at 78 locations across India, Bangladesh, Thailand, Indonesia and the Philippines between 1995–1997, used six treatments and compared results on rice yield. The greatest nutrient response was to an application of a nitrogen, phosphorous and potassium (NPK) mix which increased yields from 2.25 to 4.00 tonnes per hectare on average. The effect of adding micronutrients was small, and potassium and phosphorous was of little benefit unless nitrogen was added. But the magnitude of the nitrogen response varied substantially with water regime. As such, substantial yield gains are possible in rainfed systems with the application of appropriate nutrients, especially if used in conjunction with rice varieties suitably adapted to the target environments.


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