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Modern Concepts of Fertilizer Application

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Abstract: In India use of HYV's and hybrids increased the uses of fertilizer application, which became an important role to increase agricultural production and to feed the ever-growing Indian population. Total fertilizer consumption increased by 5.6% in 2015-16 over 2014-15. The observed change in the use ratio of NPK from 6.7:2.4:1 in 2014-15 to 7.5:3.0:1 in 2015-16. Around 50% of total fertilizer consumption is used in rice and wheat production. There are many reasons of fertilizer losses and low fertilizer use efficiency viz. immobilization, leaching, volatilization, de-nitrification and soil fixation etc. Nutrient use efficiency can be improved by adopting proper method of fertilizer application with appropriate source, dose and time. There are some modern concepts for fertilizer recommendation which should be site specific and synchronous to crop need to prevent losses and increases FUE. Some modern approaches of nutrient management are the uses of LCC, SPAD meter, green seeker, DRIS, nutrient expert, STCR, aerial imagery and site maps and nitrification inhibitors etc. These approaches can definitely reduce fertilizer application rate, environmental pollution and input cost. These are improved strategies for sustainable crop production.

Keywords: fertilizer consumption, FUE, modern concepts, sustainable crop production

1. Introduction

Fertilizer consumption has increased considerably from 60's (~ 0.69-2.94 Lakh tones) to 2010-11 (~ 281.22 Lakh tones). This increase in fertilizer consumption was due to introduction of fertilizer responsive HYVs and hybrids (FAI, 2015). Despite use of ideal ratio 4:2:1 current NPK use ratio is 8:2.7:1 which leads to imbalance nutrition and lower productivity of 2.5 t ha⁻¹ compared to world average of 3.5 t ha⁻¹ in rice.