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Resource conservation in wheat (*Triticum aestivum* L.) under different water and nitrogen stress levels

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ABSTRACT

A field experiment with four irrigation and four nitrogen treatments was carried out with wheat (*cv* HD 2932) for two *rabi* seasons, 2009-10 and 2010-11 at ICAR-Indian Agricultural Research Institute, New Delhi to quantify the water and nitrogen use efficiencies under differential water and nitrogen levels. Responses of water-use efficiency (WUE), nitrogen-use efficiency (NUE) and wheat yield to variable water and nitrogen levels were investigated. Yield and NUE are significantly affected ($P \leq 0.05$) by the different water and nitrogen levels. Under low water level condition along with no nitrogen stress resulted in only 5% decrease in yield compared to the highest yield but it had increased NUE from 34 to 38%. Therefore, low water stress can be allowed which can result in higher NUE and non-significant decrease in yield. The study revealed that the lower water stress resulted in higher NUE, however, higher water stress resulted in decline in NUE.