Investigation of wheat weed management by fertilizer management

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To investigate the effects of nitrogen and phosphorous application rate and application methods on weeds management of wheat, an experiment was performed as factorial, based on completely randomized design with three replications at Research Farm, Faculty of Agriculture, Ferdowsi University of Mashhad, Iran in 2009. Treatments included nitrogen rates (100 kg ha⁻¹, 200 kg ha⁻¹, and 300 kg ha⁻¹), phosphorous rates (100 kg ha⁻¹, 200 kg ha⁻¹), and their application methods (Broadcast and band application). Phosphorus source for fertilization was superphosphate tribute applied soil incorporated before wheat sowing and N source was urea, divided into halves. 50% were applied pre plant and 50% at shooting stage. The results showed that fertilizers application methods resulted increasing wheat yield and reducing of weeds biomass and density was significantly different (p<0.01). Phosphorus and nitrogen band application method reduced the weeds biomass and weed density by 54% and 34% respectively and increased of wheat biomass and seed yield by 21% and 36% compared to their broadcast application method. The interaction effects of nitrogen and phosphorous application rate and also the interaction of phosphorus and nitrogen application methods showed that the fertilizers band application > 200 kg ha⁻¹ phosphorus rate and 300 kg ha⁻¹ nitrogen rate were the best treatment in wheat yield improvement and reducing weeds. These results indicated that by modifying fertilizers application methods and changing the amounts of their application, we may improve the fertilizers use efficiency and weed management in wheat.