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Response of the some of biochemical characteristics of wheat grain to Cycocel, biofertilizer and zinc sulfate under dry land farming

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Background and Aims: Wheat in Iran is considered one of the strategic products of the country. The aim of this study was to investigate the response of biochemical characteristics of wheat grain to the application of Cycocel, zinc sulfate and Nitroxin.

Materials and Methods: This investigation was conducted as two factorial experiments using a RCB design with three replications at two sites in Ilam and Bushehr during 2013-2014 cropping seasons. The experimental factors were including two levels of Cycocel (0, 2.5g.lit⁻¹), zinc sulfate at 0, 25, 50 kg.ha⁻¹, and Nitroxin (seed inoculated and non-inoculated). After harvesting, amount of protein, gluten, Gliadin, glutenin and amino acids were measured. The results were analyzed by SAS software and the average data were compared using the LSD test.

Results: The highest grain protein content (13.8%), wet Gluten (36.1%), Gliadin (53.6%) and Glutenin (31.8%) were obtained from plants treated with Cycocel spraying, at 50 kg.ha⁻¹ of zinc sulfate and Nitroxin inoculated seeds treatment. Cycocel spraying at 2.5g.lit⁻¹, 50 kg.ha⁻¹ of zinc sulfate and inoculation of seeds with Nitroxin resulted the highest amounts of lysine, threonine and methionine were obtained by about 510, 545 and 772 milligrams per 100 gram of protein sample, respectively.

Conclusion: Generally, it can be concluded that Cycocel, zinc sulfate and Nitroxin might be effective in improvement and increasing quantitative and biochemical traits of grain yield in wheat under dry land farming.

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