

## Effect of Time and Rate of Nitrogen Application on the Malting Quality of Barley Yield in Sandy Soil

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**Abstract :** A field experiment was conducted during the winter season of 2013/2014 in the barley production area of Dakhala - New Valley Governorate, Egypt to assess the effect of nitrogen rate and time of N fertilizer application on barley grain yield, yield components and N use efficiency of barley and their association with grain yield. The treatments consisted of three levels of nitrogen (0, 70 and 100 kg N/acre) and five application times. The experiment was laid out as a randomized complete block design with three replication. Results revealed that barley grain yield and yield components increased significantly in response to N rate. Splitting N fertilizer amount at several times result in significant effect on grain yield, yield components, protein content and N uptake efficiency when compared with the entire N was applied at once. Application of N at rate of 100 kg N/acre resulted in accumulation of nitrate in the subsurface soil > 30cm. When N application timing considered, less NO<sub>3</sub> was found in the soil profile with splitting N application compared with all preplans application.

**Keywords :** nitrogen use efficiency, splitting N fertilizer, barley, NO<sub>3</sub>

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