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# Assessment the Correlation of Rice Yield Traits by Simulation and Modelling Methods

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**Abstract :** In order to investigate the correlation of rice traits in different nitrogen management methods by modeling programming, an experiment was laid out in rice paddy field in an experimental field at Caspian Coastal Sea region from 2013 to 2014. Variety used was Shiroudi as a high yielding variety. Nitrogen management was in two methods. Amount of nitrogen at four levels (30, 60, 90, and 120 Kg N ha-1 and control) and nitrogen-splitting at four levels (T1: 50% in base + 50% in maximum tillering stage, T2= 33.33% basal +33.33% in maximum tillering stage +33.33% in panicle initiation stage, T3=25% basal+37.5% in maximum tillering stage +37.5% in panicle initiation stage, T4: 25% in basal + 25% in maximum tillering stage + 50% in panicle initiation stage). Results showed that nitrogen traits, total grain number, filled spikelets, panicle number per m2 had a significant correlation with grain yield. Results related to calibrated and validation of rice model methods indicated that correlation between rice yield and yield components was accurate. The correlation between panicle length and grain yield was minimum. Physiological indices was simulated with low accuracy. According to results, investigation of the correlation between rice traits in physiological, morphological and phenological characters and yield by modeling and simulation methods are very useful.

**Keywords :** rice, physiology, modelling, simulation, yield traits
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