

عنوان مقاله:

Documenting production process and the ranking factors causing yield gap in rice fields in Sari, Iran

محل انتشار:

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خلاصه مقاله:

The documentation process is very important for identifying yield constraint factors and yield gap. For this purpose, all managing practices were recorded by monitoring of paddy rice fields in Sari region, Iran from 2015 to 2016. Field identifications were undertaken in such a way that they included all the main production procedures with variations in management viewpoints. The results revealed that seed consumption varied from 40 to 95 kg ha⁻¹ and the range of seedling age varied from 20 to 50 days. Planting density was 10 to 66 plants per m². Nitrogen application by 30% of the farmers ranged from 46 to 83 kg ha⁻¹, and 40% of the farmers applied 83 to 138 kg of nitrogen per hectare. In 73% of the fields, nitrogen was not used after flowering stage. The range of yield varied from 3100 to 5430 kg ha⁻¹, and in 60% of the studied fields, the paddy yield varied from 4205 to 5200 kg ha⁻¹. In the comparative performance analysis (CPA) model, the actual yield and the yield potential were estimated to be 4495 and 6337 kg ha⁻¹, respectively, and the yield gap was 1841 kg ha⁻¹. Among the five variables entered in the model, the effects of potassium application and biological fight were remarkable, which the paddy yield increase by these variables was 709 and 806 kg ha⁻¹, respectively, and equal to 39% and 44% of the total yield variation. Therefore, since the calculated potential yield was achieved through actual data in each paddy field, it seems this yield potential is attainable.

کلمات کلیدی:

Actual yield, Attainable yield, CPA model, Management factors, Potential yield

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