

Application of Grey System Theory on Biology: (IV) Grey Relational Analysis on the Chlorophyll Contents and Yield of Rice

Wen-Dar Huang¹, Jr-Syu Yang², Ming-Huang Hsu³, Shiu-Fong Huang⁴,
Zu-Wei Yang⁵, Shine-Shiang Chang⁶, Yang-Zenq Tsai⁷ Chi-Ming Yang^{8*}

Abstract

The present calculation used original data from Ramesh *et al.* (2002). In India, the grey relational analysis was applied to investigate the degree of contribution of chlorophyll content, determined with a SPAD chlorophyll meter on the grain yield of rice. Rice yield was treated as reference data series, and chlorophyll contents, (at various growth stages), as test data series. A grey relational analysis was conducted on the basis of normalization. The grey relational values showed that grey order is DAS 93>86>79>72>100. This suggests that when predicting grain yield, the best time to use chlorophyll contents is at the before and after stage of flowering. However, climates and rice cultivars are different between India and Taiwan, and therefore, we still need to do more studies to see if the above result in India can be applied to Taiwan.