



Mungbean (*Vigna radiata* L. Wilczek) Varietal Tolerance to Biological Stress

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Abstract: Two field experiments were performed during the two successive summer seasons 2013 and 2014 in a private farm El- Gmalia district, Dakahlia Governorate, Egypt. The experiments aimed to study the effect of biological stress resulted from relay intercropping of maize of growth and yield on mungbean. Four mungbean varieties were subjected to biological stress resulted from intercropping with maize at 2:2 intercropping pattern. The results showed significant gradual reduction in light energy flux density ($J m^{-2} s^{-1}$) at different heights for varieties, cropping systems and their interaction. Kawmy-1 plants under intercropping pattern suffered from the severe reduction in light energy flux density at all measuring heights of the canopy than the other varieties. There were insignificant differences among mungbean varieties in photosynthetic pigments. NCM-7 and King under intercropping pattern produced the greatest DM weight for stem, leaf and total DM/plant. Mungbean growing under intercropping system gave the highest growth attributes NAR, RGR and CGR at 55-65 days from sowing without significant differences compared with SI and SII cropping systems. NCM-7 recorded the lowest no. of pods, seeds per plant, HI, seed yield per plant and seed yield per hectare as compared with the other mungbean. The data of biological yield / ha show that Kawmy-1 proved to be the most superior variety under intercropping system compared to the other varieties although it suffers from illumination shortage but it seems that it has lower saturation point of light than the other varieties. It could be concluded from this study that Kawmy-1 possessed greater tolerance for biological stress than the other tested varieties. However, NCM-7 performance show that it is better to utilize it as forage crops under solid on intercropping systems.

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