# Strategies for Optimizing Light Use in Soybean. (C03edwards162238-Poster)

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## Abstract:

Studies were conducted in 2001 at Fayetteville, AR to evaluate the use of early maturing soybean cultivars as a tool for better utilizing available solar radiation during a growing season. Soybean seeding density (10, 20, 40, 60, or 100 seed per square meter), soybean maturity group (00, 0, I, II, III, IV, V, and VI), and intensive cropping rotations were evaluated as methods for modifying seasonal light interception. Cumulative intercepted solar radiation increased as soybean seeding density increased. MG I and II soybean cultivars received less cumulative solar radiation from emergence to growth stage R6 but produced total biomass and grain yields greater than or equal to those of MG V and VI cultivars typically grown in the Midsouth. The extended growing season available to Midsouth farmers provides ample opportunity for production of two soybean crops in a single growing season. Our work indicates successive cropping combinations of MG 0, I, and II cultivars intercept more solar radiation and produce higher total grain yields than a single full season crop of a MG V or VI cultivar. Overall, this work demonstrates that the advantages of early maturing soybean cultivars in the Midsouth are not limited to drought avoidance, but include more efficient use of available light and opportunities for unique cropping rotations.

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