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# Relationship between Leaf Movement of Trifoliolate Compound Leaf and Enviromental Factors in the Soybean Canopy : V. Differences in leaf movement among cultivars

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**Abstract:**
Varietal differences in leaf movement of soybean plants were compared among 29 cultivars grown in the field. Large differences in terminal leaflet inclination angle (β) of each cultivar, measured during the daytime, were observed ranging from 10 to 65 degrees on Aug. 8th ; and from 25 to 80 degrees on Sept. 4th in 1984. Inclination angles of cultivar were not always parallel to each measurement. However, 'Miedaizu' showed the least degree in both measurements. The differences of. diurnal changes in β were compared between two cultivars, 'Miedaizu' and 'Enrei', in 1985. β began to increase in the early morning and reached a maximum between 9 and 11 a.m., followed by a gradual decrease towards evening. 'Miedaizu' had a smaller β throughout the daytime compared with 'Enrei'. In both varieties, leaf movements became more active from the vegetative stage towards the reproductive stage. Diurnal variations in relative light intensity were observed in the upper layers of the canopy and its degree of change was smaller for 'Miedaizu' than for 'Enrei'. The leaf xylem water potentials during the daytime in 'Miedaizu' was 0.1 MPa lower than 'Enrei'. These results suggest that sunlight penetrates into the soybean canopy through the active leaf movement and this plays an important role in the avoidance of water stress.

**Keywords:**
Leaf inclination angle, Leaf movement, Leaf xylem water potential, Light penetration, Soybean, Varietal difference

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