

Effect of light intensity on growth of some citrus weeds and efficacy of glyphosate. Singh, S.^{1,*} and Futch, S.H.² ¹Agronomy Department, CCS Haryana Agricultural University, Hisar, Haryana, India, ²Citrus Research and Education Center, University of Florida, Lake Alfred, FL. Due to abundant sunshine, rainfall and wide spacing, Florida citrus faces stiff competition from several weeds for most part of the year. Weed species composition and their growth vary under mature and young citrus trees due to differential light intensity. Weeds growing under shade also differ in cuticle thickness than those under full sunlight which may affect herbicide uptake and translocation. Information on effect of light levels affecting plant growth and herbicide efficacy is limited for citrus weeds. Present study was undertaken in mini greenhouses with horticultural grade shade cloth allowing 10, 30, 40, 70, and 100% light. *Emilia fosbergii*, *Morrenia odorata*, *Bidens pilosa*, and *Richardia brasiliensis* were planted in 1 Gal pots using field soil with 3 replicated pots for each light level. Plants were watered daily and fertilized as per need. Glyphosate at 280 and 520 g/ha was sprayed using a chamber track sprayer fitted with flat fan spray nozzle delivering 190 L/ha volume at 140 kPa. Control plants were maintained for each species and light levels. Light intensity and air temperature inside and outside greenhouse were recorded using sensors attached with data loggers. Plants height was recorded at spraying, 2, and 4 wks after spraying. Visual mortality was recorded periodically and fresh weight was measured at harvest. Plants growing in greenhouse with 10% incident light had 2-3°C lower temperature than outside, whereas temperature was similar in greenhouses with 40 or 70% incident light. *R. brasiliensis* was most sensitive to light followed by *M. odorata*, *B. pilosa* and *E. fosbergii*. Plant height of *B. pilosa* and *M. odorata* was more at 30 and 40% light intensity. *R. brasiliensis* recorded greater height at 70 or 100% light levels, but fresh weight was more at 40% light intensity. Glyphosate efficacy was significantly affected by different light levels among the weed species.

(322)