ISBN: 978-85-64093-07-2

Growth, development and seed production of *Eleusine indica*

Hudson Kagueyama Takano[1], Rubem Silvério de Oliveira Jr.[2], Jamil Constantin[3], Guilherme Braga Pereira Braz[4], João Carlos Padovese Filho[5], Rafael Romero Mendes[6], Luiz Henrique de Morais Franchini[7]

Universidade Estadual de Maringá[1], Universidade Estadual de Maringá[2], Universidade Estadual de Maringá[3], Universidade Estadual de Maringá[4], Universidade Estadual de Maringá[5], Universidade Estadual de Maringá[6], Universidade Estadual de Maringá[7]

E. indica (goosegrass) is one of the five worst weeds in the world, because it is a worldwide problem and there are reports of multiple resistance to herbicides up to four mechanisms of action. Besides that, *E. indica* biotypes resistant to glyphosate were found in soybeans areas in Paraná state, being a new struggle to the Brazilian agricultural systems. The objective of this study was to evaluate the growth, development and seed production of goosegrass, in order to contribute to the biology and ecology of this species, and consequently with its integrated management. The experiment was conducted in greenhouse during May to September, 2015. The evaluations occurred on 16 dates throughout the plant development cycle: 3, 10, 17, 24, 31, 38, 45, 52, 59, 66, 73, 80, 87, 94, 101 and 108 days after emergence (DAE). The experimental design was completely randomized, with four replications (pots of 3 dm^3). Growth analysis parameters (relative growth rate, absolute growth rate and net assimilation rate) were calculated from primary data (leaf area and dry mass of each part of the plant throughout its life cycle). *E. indica* required 12 days to germinate completely; tillering and seed production started at 9 and 38 DAE, respectively. On average, one single plant produces more than 120,000 seeds at 108 DAE. Between 38 and 43 DAE, there is a pronounced growth period, when tillering, total biomass and absolute growth rate increase substantially. Based on plant growth and morphology, management of *E. indica* should be done primarily before 38 DAE, due to exponential growth after that. An early management also prevents seed production and dissemination, being even more essential for those biotypes that shows resistance to the glyphosate.

Palavras-chave: goosegrass, relative growth rate, biomass allocation, weed biology

Apoio: CNPQ; Universidade Estadual de Maringá