

## Growth and development of *Fimbristylis miliacea* (L.) Vahl

### ABSTRACT

This experiment was conducted in the glasshouse of Universiti Putra Malaysia, to determine the growth and development of *Fimbristylis miliacea* (L.) Vahl. Twenty *F. miliacea* seeds were surface sown in ten plastic buckets of 18 cm diameter filled with 3 kg soil. After germination only one plant/bucket was retained. Time of first seedling emergence, time and number of leaves appearing until first tiller formation, time of tiller formation, first inflorescence, the first 10 inflorescences appearance and their maturity were recorded for each plant. Plant height and the number of inflorescence per plant was recorded weekly for up to 4 months after sowing. The first ten inflorescences for each plant were tagged after emergence, subsequently mature inflorescences were collected and the numbers of spikelets/inflorescence, seeds/inflorescence, seeds/ plant and 1000 seed weight were determined. Statistical analysis was performed as complete randomized design on weekly observed plant height and inflorescence number using the SAS statistical software and means were tested using Tukey's studentized range test at the 5% level of probability. *Fimbristylis miliacea* seedlings emerged at 3 days after planting of seeds. Approximate times required for the sequential production of 10 leaves, tillers, first 10 inflorescence and their maturity were 28 days after emergence (DAE), 35 DAE, 49 DAE, 63 DAE, respectively. Plant height increased rapidly from 3-8 WAE and maximum plant height (64.05 cm) was attained at 10 WAE. This species had three important growth stages: a slow growth stage during the first 4 week after emergence (WAE); a rapid growth stage from 4-9 WAE; and finally, a maximum growth stage from 9-17 WAE. Within this first 4 weeks after emergence would be the most appropriate time for controlling this species with early post emergence herbicides. Each *F. miliacea* plant produced on average of 2.3 tillers/plant and a total of 134 inflorescences, with 84 inflorescences/plant ripening within this period. Each inflorescence comprised of 48 spikelets with 511 seeds and matured after 3 weeks of emergence. Total seeds/plant and 1000 seed weight were 42,275 and 0.035 g, respectively. Time required for seed ripening was 76 days after emergence.

**Keyword:** Life cycle; Growth; Development; *Fimbristylis miliacea*