

### Supplementary Material

#### **Stem and pseudostem growth play a key role in biomass accumulation of guineagrass in long regrowth cycles**

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Table S1. Functions, estimated parameters, and adjusted coefficients of determination for number of leaves appeared on guineagrass swards

Season	Model type and significance (ANOVA)	Estimated parameters and significance ( <i>t</i> -statistic)	Adjusted $R^2$
Summer 1	natural logarithmic <sup>***</sup>	$a = 1.7008^{***}$ ; $b = -7.2776^{***}$	0.68
Autumn (tillers whose panicle did not emerge)	natural logarithmic <sup>***</sup>	$a = 3.2423^{***}$ ; $b = -15.63^{***}$	0.74
Autumn (tillers whose panicle emerged) before (1) and after (2) observation of the first flowering primordia	natural logarithmic <sup>1***</sup> / two-segment linear spline (linear increase-constant) <sup>2***</sup>	$a = 3.7357^{***}$ ; $b = -18.3731^{***}$ / $a_1 = 0.0138^{***}$ ; $b_2 = 7.75^{***}$ ; $gdd_0 = 704.2^{***}$	0.82/ 0.70
Summer 2	natural logarithmic <sup>***</sup>	$a = 2.2877^{***}$ ; $b = -9.6867^{***}$	0.73

For the natural logarithmic models: *a* is the parameter multiplying  $\log_e$  (gdd); and *b* is the coefficient summing to  $a \cdot \log_e(\text{gdd})$ . For the two-segment linear spline (linear increase-constant) function: *a*<sub>1</sub> is the angular coefficient of the first segment; *b*<sub>2</sub> is the value of the second segment; and *gdd*<sub>0</sub> is the breakpoint. \**P* < 0.05; \*\**P* < 0.01; \*\*\**P* < 0.001; ns, not significant.

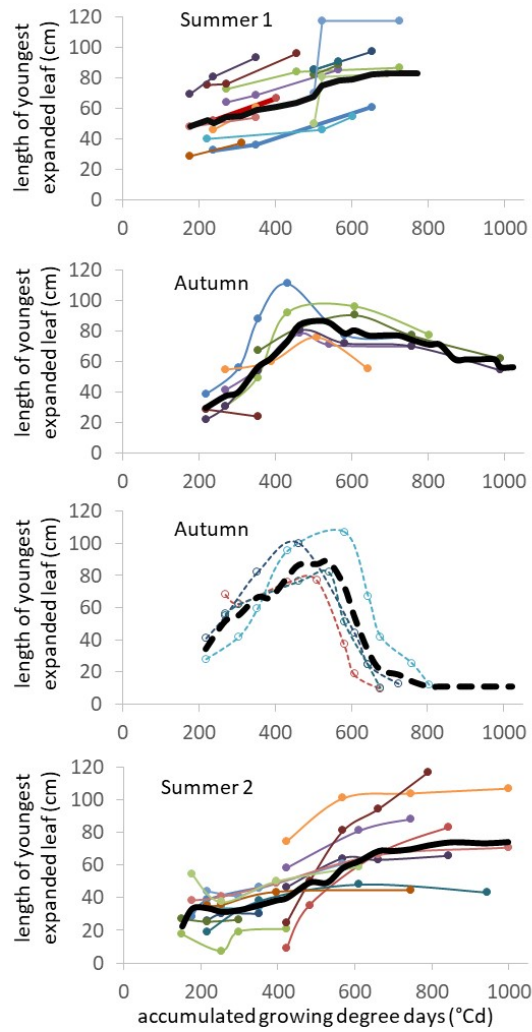


Figure S1. Length of youngest expanded leaf on individual tillers (coloured; i.e. one color for each tiller) and averaged among the tillers (black) as a function of accumulated growing degree-days in Summer 1, Autumn, and Summer 2. Solid lines and closed symbols are for tillers whose the panicle did not emerge up to the end of the growth cycle, while dashed lines and open symbols are for tillers whose the panicle emerged during the growth cycle. The circles for individual tillers represent the length of the youngest expanded leaf when it fully expanded.

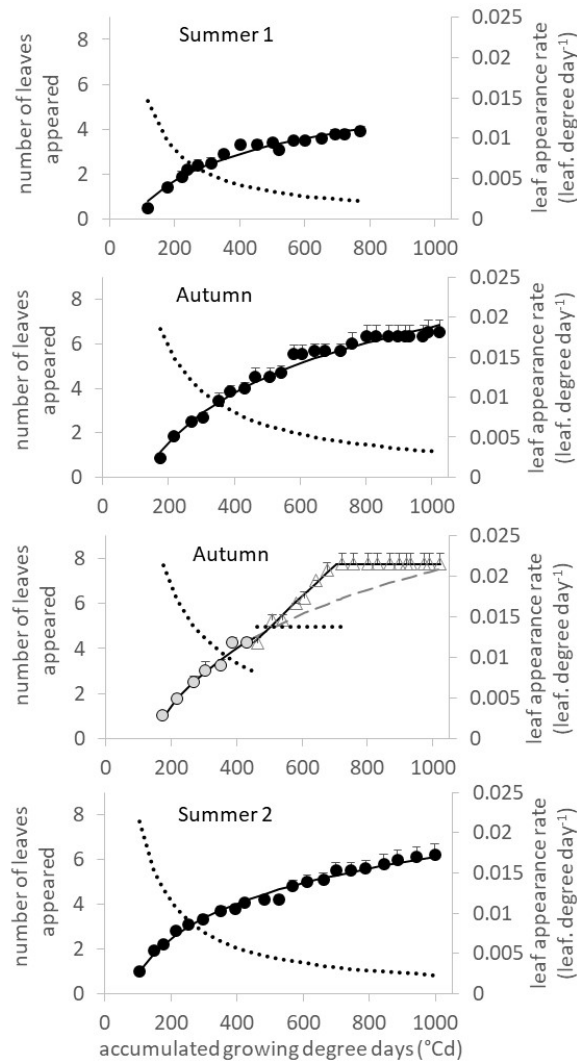


Figure S2. Number of leaves appeared (●/○/△) and leaf appearance rate (dotted lines) as a function of accumulated growing degree-days in Summer 1, Autumn, and Summer 2. The closed symbols are for tillers in which the panicle did not emerge up to the end of the growth cycle, and the open symbols are for tillers in which the panicle emerged during the growth cycle. The circles represent the tillers before flowering initiation (observation of reproductive meristem, see section 2.1.1. for details), while the triangles represent the same tillers after the flowering initiation. Solid lines are fits of the accumulated number of appeared leaves over thermal time (see Table S1 for details).

The leaf appearance rate is given by the derivative of the fitted models. The dashed line is a projection of the fit of the tillers before the flowering initiation. Bars indicate SE.

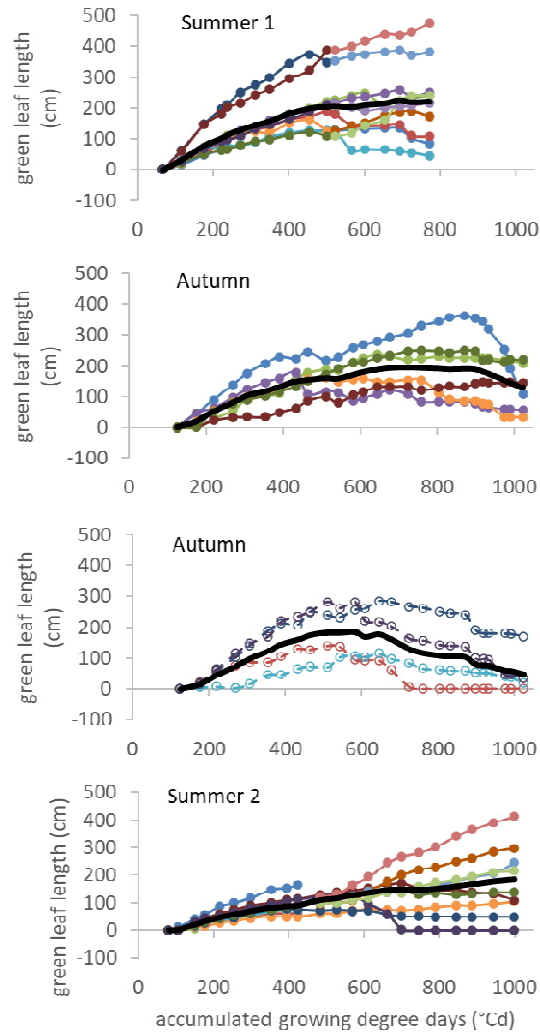


Figure S3. Green leaf length on individual tillers (coloured; i.e. one colour for each tiller) and averaged among tillers (black) as a function of accumulated growing degree-days in Summer 1, Autumn, and Summer 2. Closed symbols and solid lines are for tillers whose panicle did not emerge during the growth cycle, while open symbols and dashed lines are for tillers whose panicle emerged during the growth cycle.