Growth of golf turf as a function of light and temperature under Swedish conditions – a simulation study

Karin Blombäck[1], Henrik Eckersten[2] and Erik Sindhøj[2],
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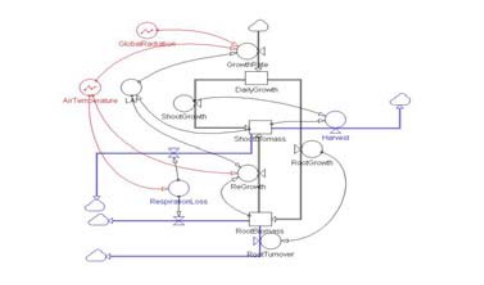
[2]Department of Crop Production Ecology, Swedish University of Agricultural Sciences.

AIM

To simulate biomass production and losses, including winter mortality, for different shortcut turfgrass species under present climate and climate change scenarios.

THE MODEL

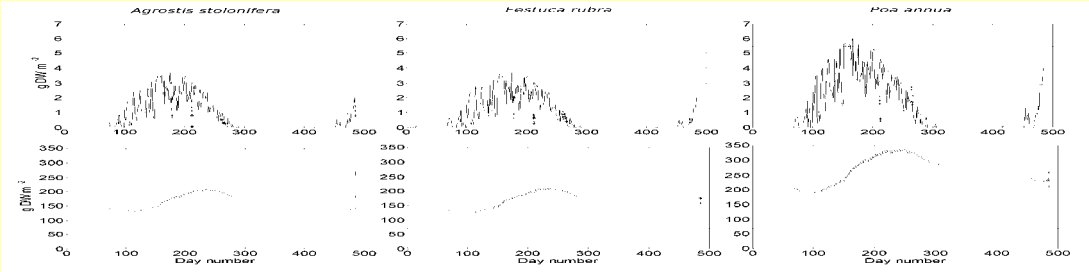


CONCLUSION

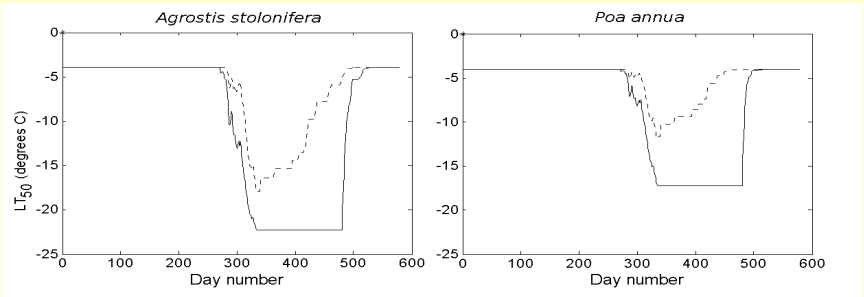
- **Turf growth could be estimated as a function of light and temperature by the simulation model.**
- **Differences between species was expressed as differences in radiation use efficiency and temperature sensitivity**
- ***Poa* was more sensitive to low temperature (LT) stress during overwintering than *Agrostis*.**
- **Increased LT stress with warmer climate was due to less effective hardening during autumn and more frequent warm spells during winter hastening the dehardening process.**

RESULTS

Calibration of the model against measurements of daily growth (top) and shoot biomass below clipping height (bottom)



Simulated daily LT tolerance values for *Agrostis* and *Poa* species using real weather data from 2007 and 2008 (solid line) and weather data adjusted to a potential climate change scenario (broken line).



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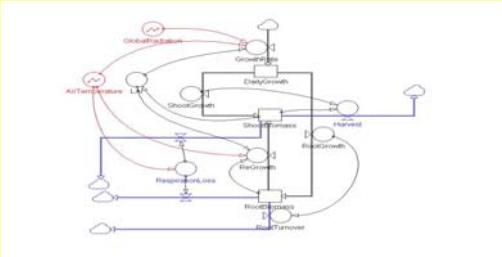

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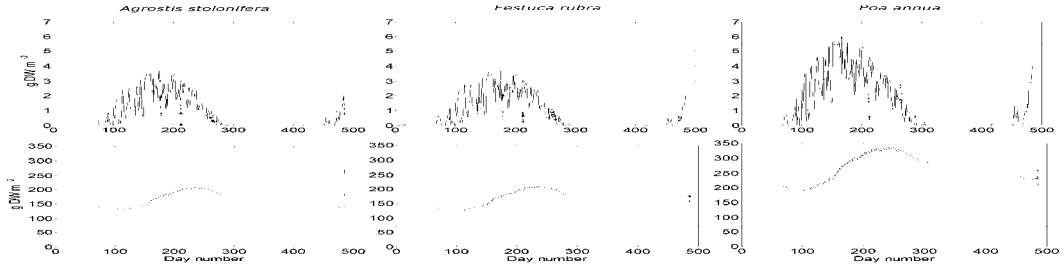

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