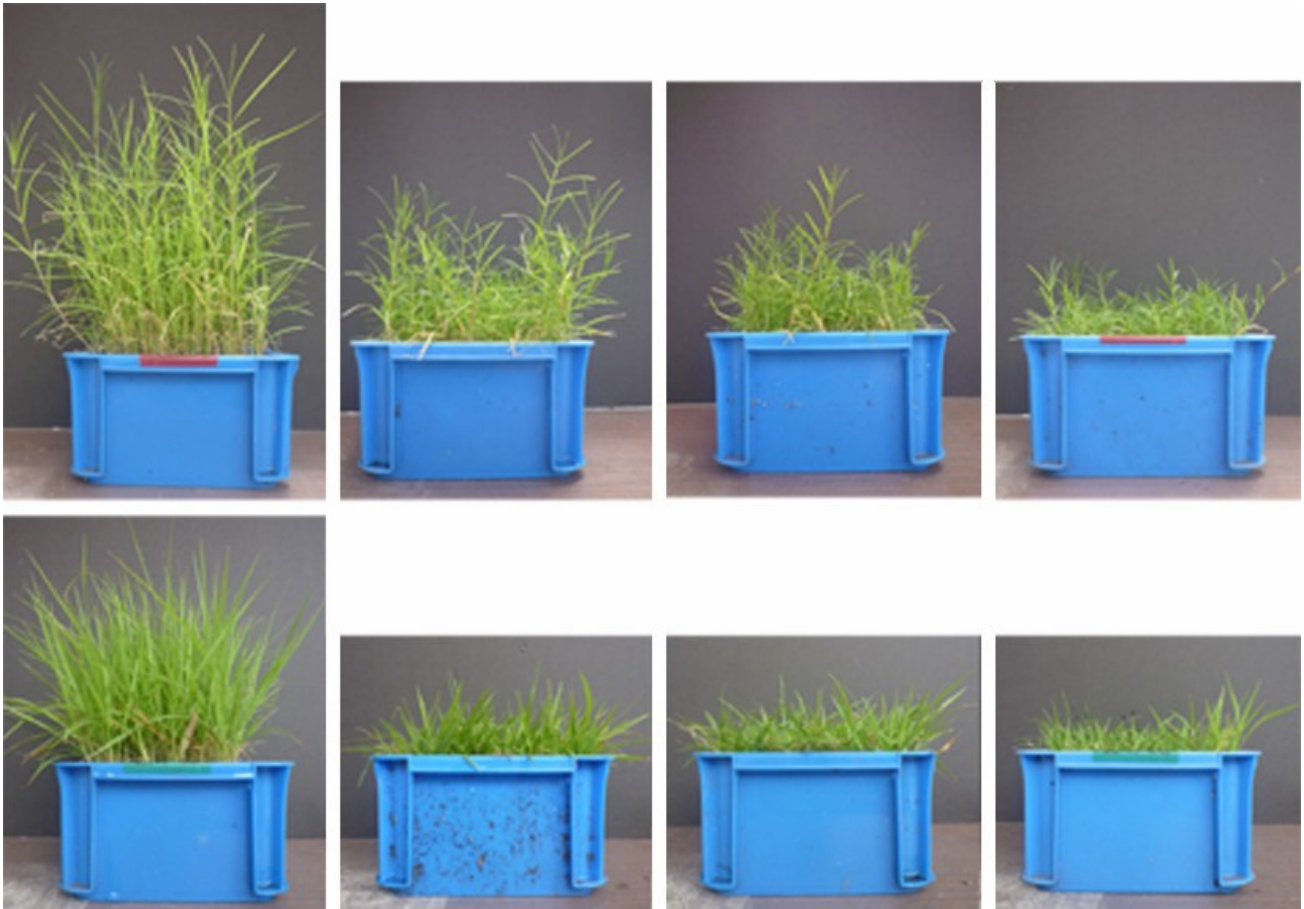


Interactions of plants with various biological and physical environmental factors

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Bermudagrass (top) and zoysiagrass (bottom) grown under different trampling stresses. From left to the right, control plants (grown without trampling), plants trampled once a day, plants trampled four times a day, and plants trampled 8 times a day. The higher trampling stresses cause smaller plant sizes; however, the plants with smaller sizes exhibit higher leaf nitrogen contents and higher photosynthetic activities.

Plants, as producers in ecosystems, provide other organisms with food and residence. At the same time, plants are affected by various environmental factors, including both biotic and physical ones. We are studying on the mechanisms and biological significance of plants' responses to environment. Our research deals with various aspects of plants' interaction with environmental factors, such as allelopathy (plant-plant interaction through chemicals released from plants), thigmomorphogenesis (responses of plants to mechanical stimuli, including those from large mammals), hypersensitive cell death (responses of plant cells to pathogenic microbes), and leaf reddening during cold seasons (responses of plant leaves to light stress under low temperature).

Keywords : Allelopathy, thigmomorphogenesis, photosynthesis, hypersensitive cell death, leaf reddening