The Proaxis of Switchgrass. (C06-boe162920-Poster)

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Abstract:

The proaxis is an area of a few nodes and compressed internodes at the base of a switchgrass (Panicum virgatum) tiller. Buds at these nodes have the potential to differentiate into rhizomes and produce new tillers. Our objective was to describe the general development and morphology of the proaxis of switchgrass and determine if morphological variation in proaxes occurred among genetically diverse populations. The buds on the proaxis are arranged alternately, and rhizomes grow in 2 ranks, as is the case for leaves from nodes that subtend elongated internodes of the stem above the proaxis. Leaves that subtend buds on the proaxis are reduced but increase in size and complexity acropetally. Buds on the proaxis of young tillers become noticeable, and the proaxis begins to increase in size during early stages of stem elongation. By the time a tiller has 3-4 elongated internodes, the proaxis has increased substantially in diameter, and the rhizomes have expanded in length and weight. The proaxes of switchgrass cultivars from different geographical regions had similar numbers of nodes and patterns of rhizome development.

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