Comparison of switchgrasses for use as vegetative barriers on sloping cropland

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'Alamo' switchgrass (*Panicum virgatum* L.), a tall, robust cultivar, is recommended for use in vegetative barriers in the southeastern USA. It requires mowing management to prevent shading that will reduce yield in adjacent crop rows. A study was conducted on a Grenada silt loam (Fine-silty, mixed, thermic Glossic Fragiudalfs) in Coffeeville, MS, to compare short stature switchgrass collections, Chickasaw and Kemper, with Alamo clipped (1x) and Alamo unclipped. Stem size, plant height and canopy spread were collected in the summer and fall. Switchgrass effect on soybean [*Glycine max* (L.) Merr.] plant height and yield in rows 1, 2, 3 and 5 from each barrier were determined. Unclipped Alamo was the tallest (2.4 m) and had the greatest canopy spread (3.5 m) while Kemper and Chickasaw were the shortest (1.6 and 1.8 m) and had the least canopy spread (1.1 and 1.2m). Clipping Alamo significantly reduced plant height and canopy spread but stem size was equal to or larger than unclipped Alamo. Unclipped Alamo reduced soybean plant height and yield in the first row resulting in a significant switchgrass x row interaction. Clipping Alamo in early summer increased soybean yield 38% in the first row compared to unclipped Alamo. There were no reduction in soybean plant height or yield in rows adjacent to Kemper and Chickasaw. These switchgrasses could be used as substitutes for Alamo to eliminate additional cost for clipping management.

Key words: switchgrass, vegetative barrier, soybean yield and height, clipping