

BROWN FLATSEEDGE (*CYPERUS FUSCUS*): A POTENTIAL RICE WEED. C.T. Bryson and R. Carter, USDA-ARS, Southern Weed Science Research Unit, Stoneville, MS 38776 and Department of Biology, Valdosta State University, Valdosta, GA 31698.

ABSTRACT

Brown flatsedge (*Cyperus fuscus* L.) is native to Europe, Asia, Indian subcontinent, and the Mediterranean Region of Northern Africa, from Greenland and Iceland to China, south to Spain, Iran, Egypt, Algeria, and northern India. It was apparently introduced into North America in ballast or around wharfs and was first discovered in the U.S.A. in 1877. Since that time, brown flatsedge has been discovered in Canada and several states of the U.S.A., including Arkansas, California, Connecticut, Kansas, Maryland, Mississippi, Missouri, Nebraska, Nevada, New Jersey, Pennsylvania, South Dakota, and Virginia. In addition to the association with ballast and wharfs, dispersal of brown flatsedge seeds has been attributed to waterfowl and human activities, including construction equipment. Brown flatsedge was reported as a weed in semitropical areas of the old world where it is a significant weed in rice. Because bownscale sedge was recently detected in the rice production areas of the Delta Region, research was initiated at Stoneville, Mississippi to study the basic biology and ecology of brown flatsedge. Field observations were made at three sites, Chicot County, Arkansas and Pearl River and Washington counties, Mississippi. Observations were made from early spring until frost from 2003 through 2007. Experiments were established in the greenhouse to determine growth parameters and the reproductive potential of brown flatsedge. Brown flatsedge seed were collected from Washington County, Mississippi during the fall of 2006 and planted during the summer of 2007. Plants were grown in the greenhouse for 10 weeks and plant height, diameter, and number of leaves per plant, and days to first flower were recorded. All plants were harvested and dry weights were recorded for roots, leaves, culms, bracts, and inflorescences. Field observations at the three sites in Arkansas and Mississippi, determined that brown flatsedge was highly dependent on persistently moist soil or shallow standing water for establishment, growth, and seed production. Over a five-year period under natural field conditions, brown flatsedge plants germinated from late March and early April until frost. Inflorescences were observed as early as May and seed production continued until frost. In greenhouse experiments, ten-week old brown flatsedge plants were 30.2 cm tall and 63.9 cm in diameter and dry weights were 1.4, 2.0, 1.0, 0.5, 1.9 g for roots, leaves, culms, bracts, and inflorescences, respectively. The first brown flatsedge culm appeared at week five and all plants were producing seed by week nine. Brown flatsedge seems to be in the lag phase and could pose a threat to rice agriculture in Arkansas, California, Louisiana, Mississippi, Missouri, Tennessee, and Texas. Additional research is needed to determine the ecological range potential and to develop control methods for brown flatsedge.