THE SWITCHGRASS MOTH, 
BLASTOBASIS REPARTELLA

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ABSTRACT

National interest for native plants as feedstock for cellulosic biomass in ethanol production leads to questions about insect-plant associations. Investigations on the insect biota associated with switchgrass, Panicum virgatum, resulted in discovery of the moth, Blastobasis repartella (Lepidoptera: Coleophoridae: Blastobasinae), and provided new geographic and host records. This obscure moth is rare and difficult to study in native prairie remnants, but migrates to research farm plots of switchgrass and then occurs abundantly. The moth or its larva was found at four sites in South Dakota, and is now also known from seven other states. At the Aurora Research Farm, Brookings Co., SD, adults of B. repartella were monitored with emergence cages and immature stages found in plant parts. Adults are nocturnal from mid-July through mid-August, with females ovipositing under the basal prophylls of mature tillers. Larvae occur singly and bore into the proaxis and basal internodes of single tillers. Pupation occurs inside the proaxis or internode and near to an exit portal. One parasitoid species was found, the wasp Bassus difficilis (Hymenoptera: Braconidae). The best indicator of larval presence is death of a tiller prior to midstage growth and an exit portal with frass. In a two-year investigation in a 3-4 year old stand of mixed switchgrass cultivars we found per plant larval incidence typically varying up to 15%. At a 1% incidence rate and at an average of 750 tillers/m², there may be an estimated 75,000 larvae per hectare. In one instance at a separate site, tiller death rates reached near 40% on one plant.