Abstract

The Digestive Efficiency ofEuropean corn borer in Two Photoperiodic Conditions

*Ostrinia nubilalis* (European corn borer), is an herbivorous corn pest and the cost of managing this pest here is the United States has been estimated at approximately $1 billion dollars, annually.

ECB synchronize their lifecycle and environment through diapause. Two strains of European corn borer (Univoltine (UZ) and Bivoltine (BE)) were examined under two different photoperiods.

The corn borer preemptively gathers nutrients from their environment stored predominantly as triglycerides, but the establishment between diapause phenology and digestive efficiency has yet to be established fort the *Ostrinia nubilalis*.

The larvae were fed corn when they first entered the fifth instar.

The measured weight of the corn borer’s frass and the corn before and after consumption was used to determine the levels of digestive efficiency.

The purpose was to realize the effect that the length of diapause and dynamic activity had on the digestion of the two strains of the *Ostrinia nubilalis* and the photoperiods.

The two photoperiods imitating summer, 16 hours of light, and winter, 12 hours of light, were used to notice the variability in efficiency of digested foods (ECD%) in different seasons.

The results…

The outcome relates the photoperiod and the strains showing the variability leading to the further development of pest management of the European corn borer by relating the digestive efficiency to the growing seasons saving the industry resources by utilizing the data accumulated to manage the pest with greater result.

The longer the time in diapause can relate to the need for a higher efficiency since the larvae are subject to longer time in a nongathering state.