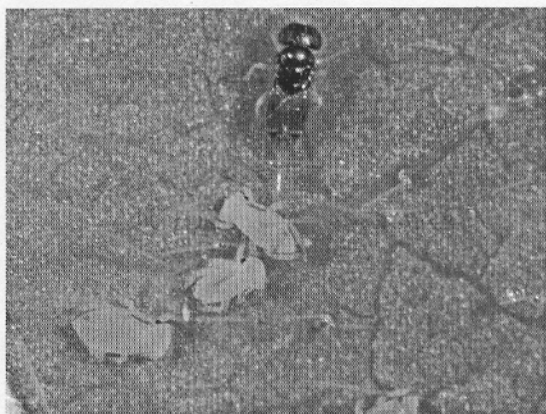


## **BIOLOGICAL CONTROL OF SOYBEAN APHID IN WISCONSIN**

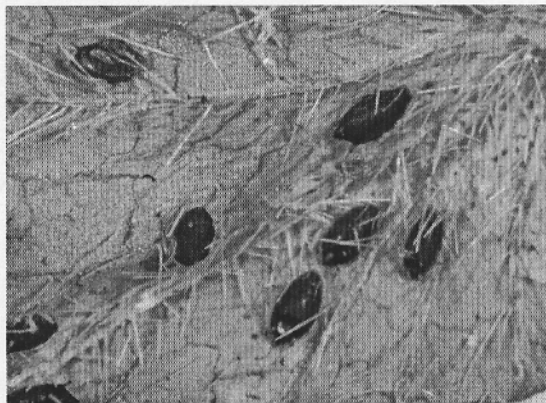
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*Aphelinus albipodus* is a parasitic wasp which utilizes the soybean aphid as a host. Eggs are deposited inside the body of a soybean aphid and the developing wasp larva consumes the aphid from the inside. Parasitized aphids are eventually killed and their exoskeleton becomes a hard shell known as an "aphid mummy." Fully developed adult wasps chew an exit hole to emerge from the mummy. The process takes somewhere on the order of 2 weeks to complete and each female wasp is capable of parasitizing several hundred aphids. Such wasps (termed parasitoids due to the fact that their hosts are killed) are therefore capable of rapid population increase. For this reason aphid parasitoids are generally regarded as having the greatest potential for reliable aphid control. In nature, wherever one finds aphids one generally finds aphid parasitoids. It is perhaps for this reason that the majority of aphid species are of little economic concern. It was hoped that native parasitoid species might attack soybean aphids and thus assist in regulating their abundance. Surveys conducted in Wisconsin soybeans during 2001, however, revealed that as a group aphid parasitoids were generally absent.

*Aphelinus albipodus* was collected from parasitized soybean aphids in Japan during the summer of 2001. In the area where the collections were made soybean aphids were difficult to find and were likely not causing economic damage to the crop. It was the opinion of those involved that aphid parasitoids at these sites were responsible for keeping soybean aphids under natural control. Establishment of these parasitoids in Wisconsin may result in a perpetual source of natural soybean aphid mortality requiring no maintenance or alteration of cropping practices. Importation biological control has been attempted many times in the United States, as the potential cost/benefit ratio is unparalleled by any other form of pest control. Importation biological control has frequently met with success. In fact, *Aphelinus albipodus* was one of several aphid parasitoids introduced to the U.S. in the 1990's to combat the Russian wheat aphid. The Russian wheat aphid has since been brought under good natural control and in many areas is no longer a serious pest of small grains.



*Aphelinus albipodus* adult parasitizing a soybean aphid



Parasitized soybean aphids are killed, becoming "mummies," which are easily recognizable in the field.