WHAT YOU NEED TO KNOW ABOUT SOYBEAN APHID BIOLOGY

David Hogg[1]

The soybean aphid, *Aphis glycines*, was first found in Wisconsin (and North America) by UW soybean researchers in July 2000. Following that initial discovery, outbreaks of the aphid were reported in soybean fields throughout southern Wisconsin. The impact of aphid feeding was devastating to soybean yields in the most heavily infested fields, with aphids literally covering the plants. In an experiment on the UW Arlington Agricultural Research Station, we were able to measure about a 6 to 8 bushel yield loss as a result of a moderate soybean aphid infestation. In addition to this direct feeding injury, the soybean aphid is known to transmit viruses that are pathogenic to soybean plants.

The extent of the soybean aphid outbreak in 2000 included northern Illinois, southwest Michigan and southeast Minnesota in addition to Wisconsin, plus the aphid was found at low levels in a number of other states ranging from Kentucky to the south and West Virginia to the east. We do not know how the aphid arrived here, but we suspect it had been in residence and undetected for at least a few years prior to the 2000 outbreak. The soybean aphid has a rather complex life cycle and seasonal history, undergoing host alternation between a "primary" woody host (buckthorn, *Rhamnus* spp.) in the winter and a "secondary" herbaceous host (soybean) in the summer, plus the aphid can appear in various morphological forms.

Research was conducted in 2001 to address the most pressing needs to obtain information to assist in developing a pest management program for soybean aphid. The presentations that follow provide the results of this research.

[1] UW Department of Entomology