The Seasonal Density Changes of the Two Aphid Species, *Myzus persicae* (Sulzer) and *Aphid gossypii* (Glover), and Their Natural Enemies on the Water Mellon and Tomato Crops in Chinju Green House Area

Pham Thi Vuong, Yoo Han Song, Jin Ho Kim & Sug Lee
Department of Agricultural Biology, Gyeong-Sang National University

Aphids are undoubtedly the most important insect pests in agriculture (Minks and Harrewijn, 1987). Aphids are difficult to control due to their high reproductive capability as well as their resistance to many different insecticides. Preliminary attempts of this paper were to monitor the seasonal population dynamics of the two major aphid species, *Myzus persicae* (Sulzer) and *Aphid gossypii* (Glover), and their natural enemies in the green house and open field conditions in Chinju green house area. The susceptibilities of the two species to the most commonly used pesticides were also examined to determine any differences in the resistance development among various source of populations in the field as well as green houses where insecticides had been used intensively.

During the early stage of the crop growing season in May, their density had maintained in very low level then subsequently begun to surge up into very high density level rapidly in June. The largest number of aphids had recorded 3,286.29 and 110.44 aphid/plant on the 16th of June in all of water melon and tomato respectively. The densities were gradually decreased afterward then reached the lowest number after the 18th of July in water melon, and the 29th of August in tomato. In the open field condition the population densities of spiders and other beneficial arthropods were increased rapidly along with the aphid density increase and reach peak in three weeks after the peak of aphids density.

The parasite community on the water melons and tomato was much richer in the open fields then in the green houses. The percent parasitism observed were 18.2% in *Aphis gossypii* in water melon and 75.6%, 24.1%, and 7.4% in *Myzus persicae* in tomato, chinese cabbage and potato, respectively. However, the rates of parasitism were as low as 0.9% in the greenhouse conditions supposedly due to many intensive chemical sprays.

The three commonly used insecticides, imidachloprid, methomyl, and α-cypermethrin, were applied on the two species of aphid. methomyl (100ppm) was the most effective to *A. gossypii*, while α-cypermethnin (100 ppm) displayed the highest mortality on *Myzus persicae*.