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Reference: SARE Project FNE00-307
Hardy Kiwi Pollination and Production

INTERIM PROGRESS REPORT

In April 2000, inclement weather, an ice storm disaster, resulted in a significant primary bud loss, especially in the female cultivar selections.

Due to this circumstance, it was not possible to carry out all of the procedures outlined in the grant. We requested and received an extension, for the grant referenced above, until the 2001 growing season.

We did however collect significant data for the 2000 season, on the secondary bud, which you will find outlined below.

Soil and leaf analysis was conducted twice, and all vines were pruned three times during the growing season. Flower characteristics for, both male and female cultivars; were documented by digital photographs.

Item #1 - A. Arguta Male Cultivars suitable for commercial production. Data was collected for assessment on the following items for male cultivars [Cornell, Fave, 74-32, 74-46, 127-40, Meader, & Ivan]

Male Flower Schedules – Early, middle, or late bloom in reference to the flowering schedules of the female vines included in this study.	Flower schedules were documented on male cultivars.
Pollen Viability – The number and viable pollen grains produced by a flower.	Pollen viability studies were not completed due to equipment failure at Bloomsburg University. Appropriations to remedy this situation have been made for the 2001 season.
Vigor – Based on flower density, the number of flowers within a specific length of growth, and the measured amount of annual replacement growth.	Flower density, stem and flower characteristics, and measured replacement growth were documented.

The data collected and observations made this year suggests that several of the male vines involved in this trial are, in actuality, the same cultivar but with different names. Many nursery distributors market unnamed plants they have acquired, and provide them with names and/or numbers for their catalogs.

Without the availability to test for different genetic markers, we don't feel that these multi-cultivars can definitely be separated as to their real origin and name. We are able however to group them by plant characteristics and assess their performance.

Item #2 – Methods of Deliciosa Pollen Dispersion. Data was collected for assessment on the following items for female cultivars [Ananasnaya, Geneva, Michigan, and Red Princess].

Flower Schedules – To match with appropriate male cultivars.	Flower schedules were documented on female cultivars.

(A) Utilizing Mechanical Application: Mechanical application had the largest impact throughout the arbor and the test vines which resulted in successful pollination of 98%.

Percentage of Successful Pollination - per marked spur vs. the original number of flowers on each spur.	Spurs were not marked due to primary bud loss. General information was collected.
Fruit Set - those fruit that continue growing on each spur.	Two of the four cultivars tested had such damage that significant data could not be provided. Anna and Geneva were noted.
Fruit Drop - the number of empty flower stems on each spur.	Anna and Geneva were noted.
Number of Fruit Yielded per Spur - at harvest from each of the marked spurs.	Anna and Geneva were noted.
Total Vine Fruit Yield - One representative of each cultivar.	Anna and Geneva were noted.
Quality & Characteristics of Fruit Harvested - Uniformity of Size, Weight, & Marketable Quality.	Due to the excessive thinning, via ice damage, the uniformity of size and market quality of the fruit was very good in respect to the minimal number of fruit the vines produced.

(B) Utilizing HoneyBees: Cultured honeybees produced the least effective mode of pollination. Honeybees returning to the hive were documented carrying little or no kiwi pollen. Varieties of bumblebees were observed visiting the vines on a 5 to 1 ratio and were collecting kiwi pollen. Due to the lack of bee activity, an additional eight (8) hives were added to the arbor and monitored.

Percentage of Successful Pollination - per marked spur vs. the original number of flowers on each spur.	Spurs were not marked due to primary bud loss. General information was collected.
Fruit Set - those fruit that continue growing on each spur.	NA
Fruit Drop – the number of empty flower stems on each spur.	NA
Number of Fruit Yielded per Spur - at harvest from each of the marked spurs.	NA
Total Vine Fruit Yield - One representative of each cultivar.	NA
Quality & Characteristics of Fruit Harvested - Uniformity of Size, Weight, & Marketable Quality.	NA

Competitive flowering plants amounted to sumac, and white clover, which was kept to a minimum by mowing.

The results for year 2000 provide performance of secondary bud, and that successful pollination can be achieved. The culmination of test data for two years will provide hardy kiwi growers with much needed information in many aspects of pollination and production.

David Jackson
Project Leader