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Enhancing Pest Control Efficiency in the Gerbera Variety Breeding Greenhouse through the Integration of Organic Silicone with Two Commonly Used Pesticides

Dr. Yoseph Shoub – Gerbera Breeding, July 2020

Following the recommendation of agronomist Avi Frizler, former senior entomologist at Bio-Bee, we began in May 2018 incorporating an organic silicone additive—**Silwet Gold**—as a surfactant into our pest control spray regimen for gerbera plants. The additive was used in combination with two pesticides: **Vertimec** and **Teppeki**.

Application Dosages:

1. **Silwet Gold** – 1.5 cc per liter of water
2. **Vertimec (18EC)** – 1.0 cc per liter of water
3. **Teppeki** – The Japanese insecticide (Trade mark 1 ISK Ltd.) – 0.3 grams per liter of water

The pesticides Vertimec and Teppeki were applied for the control of major gerbera pests:

- Tobacco whitefly (*Bemisia tabaci*)
- Leaf miners
- Various mite species
- Leafhoppers
- Thrips
- Aphids

The combination of the silicone surfactant with these active ingredients proved to be highly effective in significantly reducing the establishment and buildup of the mentioned pest populations. Moreover, it demonstrably increased the interval between consecutive pesticide applications.

Below is a record of pesticide spray dates in the greenhouse from June 2018 through June 2020.
From this data, it is evident that during the 20-month period from June 2018 to February 2020, only **seven sprayings** were conducted (excluding the COVID-19 period *), resulting in an **average interval of approximately 12 weeks** between applications.

No.	Date	Month	Year	Interval Between Applications (Months)
1	26	June	2018	–
2	13	July	"	1
3	31	January	2019	6
4	28	March	"	2
5	29	May	"	2
6	14	August	"	3

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No.	Date	Month	Year	Interval Between Applications (Months)
7	16	September	"	1
8	26	February	2020	5 *
9	29	March	"	1
10	20	April	"	1
11	25	May	"	1
12	19	June	"	1

* **Note:**
During the COVID-19 period between February and June 2020, we were preparing to export gerbera plantlets with foliage and roots to a plant propagation lab in India named **AVT**.
Due to repeated cancellations of potential flights to India during this extended period, monthly sprayings were carried out—not in response to pest presence—but to ensure the phytosanitary condition of the plants, allowing for shipment readiness on any day when air transport would become available.