

Wintergreen-Salt Grease Patties: A Varroa Mite & Tracheal Mite Treatment

Grease Patties are a mixture of:

- **'Grease': Crisco[®] or Hydrogenated Vegetable Oil**
- **Granulated Sucrose Sugar**
- **Livestock Salt**
- **Honey**
- **Wintergreen (Salicylic Acid)**

Formula, Small Batch:

4.4 pounds (1814.4 g) of granulated sugar (sucrose)

3 ounces (88.8 ml) of corn oil (for grease guns)

1.5 Pounds (680.4 g) of vegetable shortening (Crisco)

1 pound (463.4 g) of honey

1/2 Pound (226.8 g) of mineral salt (pink color) approx.

**\$7-\$8 for 50# bag from feed stores; dissolve in
wintergreen.**

2.2 ounces(65 ml) of wintergreen oil.

One batch will treat about 8-10 hives, depending on number of brood chambers, size of patties, etc. We place 5 small patties (about 2 ozs each) on top of each brood chamber and a 1/2" [1.27 cm] "roll" across the entrance, about 3/4" [1.9 cm] back in (otherwise, rain will wash it away).

Formula, Large Batch:

- **50lb block of bakers grease, divide into 12.5# quarters**
- **30 lbs sugar**
- **Pint of Wintergreen oil (natural: \$40/lb; synthetic: \$25/lb); synthetic is fine.**
- **Dissolve 2.5# of mineral (livestock) salt into the Wintergreen.**
- **Use large mixer: e.g. Falcon Brand, School Cafeterias, with 15 lb S.S. Pot, use the “big dough hook.”**
- **Use gloves.**
- **Make balls, size of base ball; divide into 2-3 portions on top of brood box frames.**
- **Dirk Heinen, Alberta, has been using grease patties for 5-6 years. He is a dealer of HBH in Alberta.**

Applying Grease Patties



Salt Patties on brood chamber



Rolled Salt Patty at Entrance



Used in grease guns



Bead of grease across entrance

Methyl Salicylate = Wintergreen

Properties of Wintergreen:

Molecular formula $C_8H_8O_3$

Molar mass 152.1494 g/mol

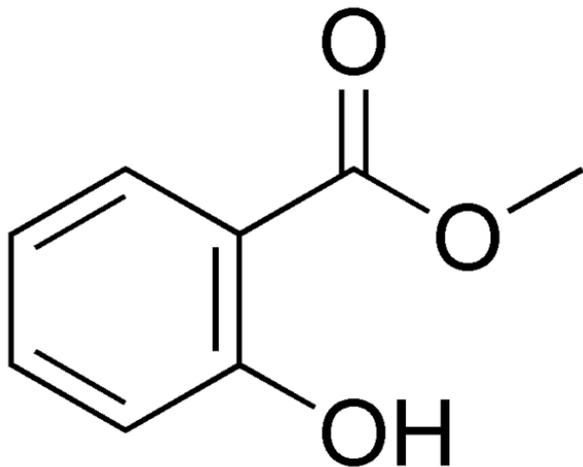
Density 1.174 g/cm³

Melting point -9 °C

Boiling point 220 - 224 °C

Hazard Flash point 101 °C

It is related to Aspirin which is salicylic acid.



Wintergreen Warning:

10 ml on the skin is lethal!

It is absorbed and stops the heart.

Wear gloves!

When to use Grease Patties:

Initially, we used them in the fall and winter. When brood is absent, the varroa mites have no where to hide; greasy bees and wintergreen lead to their demise.

However, we found that grease patties increase mite drop throughout the year. And, by lubricating the bees' wings, many beekeepers reported that foragers were lasting longer. So, now we add grease patties whenever it is convenient and when batches are available.

How do WG-Salt Grease Patties Work?

- Mites can't attach to greased bees.
- WG irritates varroa mites – they lose their grip and fall.
- Grease kills tracheal mites (we have seen none since 1997; mites get stuck in greased hairs on bees.)
- Grease reduces friction at wing tips, adds about 1 week to forager life span [?-needs verification.]
- WG in grease boosts worker immunity; WG is cytophylactic.
- Salt in patties keeps bees from seeking field sources (e.g., urine in barnyards; oil-well pits).

STORAGE.

Grease Patties will become rancid after several weeks. Bees usually consume them in 3-5 weeks.

Keep Ziplock[®] bags of grease patties, or plastic boxes of grease patties in refrigerators or in freezers.

Warm up at room temperature for a few days before use. If the bags are sealed, the wintergreen will be strong. If the odor has dropped off, add about 30 ml to an older batch.

We observed that Wintergreen Oil in grease patties or on paper towels (7%) with a carrier oil (e.g., canola) kills some Varroa mites and drives the remaining Varroa into brood cells about to be capped, disrupting their complex reproductive cycle. We have seen as many as 33 VM in one cell!

Note: Wintergreen is not on the EPA FIFRA active list 25(b), it is on the (4A) inert list. We were told by the EPA that claims of efficacy cannot be made since it is an inert, not an active ingredient.

Bees will propolize Spearmint Grease Patties!

Spearmint essential oils in sugar syrups appear to provide greater protection to the bees than wintergreen. But, when spearmint is made into grease patties, the bees cover them with propolis. Thus, the patty is wasted and not available to the bees.

Always test new combinations!

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