MN 2000
FSE 45 Rev. 77

Agricultural Extension Service ● University of Minnesota

FACT SHEET

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ENTOMOLOGY No. 45 — Revised 1977

BASIL FURGALA

Chemical Control Of Bee Diseases

For a good honey crop, the following guidelines are essential:
—Each bee colony must have a young, prolific queen;
—Hives must be well-built and in a protected location;
—Each colony must always have a surplus of honey and pollen;
—The bees must be disease-free.

Beekeepers who neglect these fundamentals will harvest little honey.

This fact sheet describes treatment methods, timing, and dosages of medications for honey bee diseases. You should refer to textbooks for disease descriptions.

Chemicals Used To Combat Bee Diseases

In Minnesota, chemicals can help prevent and control honey bee diseases. However, there is confusion about their application.

These charts present information about chemical application.

FOLLOW THESE RECOMMENDATIONS
Too little dosage is not effective, too much will be harmful to your colonies.

Table 1. Use of sodium sulfathiazole for American foulbrood control in honey bees

Chemical	Disease	Colony	When to treat	Formulation	Dosage per colony	Number of treatments
Sodium sulfathiazole (Sulfa)	AFB American foulbrood	Wintered	a. Late summer to mid-fall (Sept. 1-Nov. 1)	¼ to ½ tsp. Sulfa per gallon heavy sugar syrup	1-2 gal.	1
			b. Late winter to mid-spring (March 1-April 30)	¼ to ½ tsp. Sulfa per gallon light sugar syrup	1-2 gal.	1
		Package	At installation	¼ tsp. Sulfa per gallon light sugar syrup	1-2 gal.	1 or 2

NOTE: Sodium sulfathiazole and fumagillin (Fumidil B see Table IV) can be blended together in heavy sugar syrup when used as a late summer to mid-fall treatment.

Table 2. Use of Terramycin for American and European foulbrood control in honey bees

Chemical	Disease	Colony	When to treat	Formulation	Dosage per colony	Number of treatments
Terramycin® (Oxytetracycline)	AFB American foulbrood and EFB European foulbrood	Wintered	a. Late summer to mid-fall (Sept. 1-Nov. 1)	TM25[a] mixed 1:1 with powdered sugar	2 tsp.	1*
				TM25 mixed 1:3 with powdered sugar	4 tsp.	1
			b. Late winter to late spring (March 1-June 1)	Same as above	Same as above	4-6**
		Package	Mid-spring to late spring (May 1-June 1)	Same as above	Same as above	2-3***

[a]The number after the TM indicates the grams of activity of chemical per pound of preparation. When using TM preparations, you must apply the proper amount of TM-powdered sugar mixture to obtain the desired level of chemical activity.

*If sulfa or sulfa-fumagillin treatment is used for late summer to mid-fall treatment, omit TM fall treatment.
**If sulfa is used as a late winter treatment (March), omit one TM treatment.
***If sulfa is used as first treatment (at installation) for packages, omit one TM treatment.

TO AVOID CONFUSION

The following table should be consulted before treating colonies with Terramycin.

Table 3. Mixtures and dosages of Terramycin

Formulation	Teaspoons per colony per treatment
TM25 mixed 1:3 with powdered sugar	4
TM10 mixed 1:1 with powdered sugar	5-6
TM10 mixed 1:3 with powdered sugar	10-12
TM5 mixed 1:1 with powdered sugar	10-12
TM5 mixed 1:3 with powdered sugar	20
Better Bee Mix®	10-12
Tetra Bee Mix®	5-6

NOTE: Three level teaspoons equal one level tablespoon.

Table 4. Use of fumagillin for nosema control in honey bees

Chemical	Disease	Colony	When to treat	Formulation	Dosage per colony	Number of treatments
Fumidil B® (fumagillin)	Nosema	Wintered	a. Late summer to mid-fall (Sept. 1-Nov. 1)	1 tsp. Fumidil B per gallon heavy sugar syrup	2 gallons	1[1]
		Package	At installation	1 tsp. Fumidil B per gallon light sugar syrup	1 gallon	1[2]

[1]Fumidil B (fumagillin) and sulfathiazole can be blended together in light or heavy sugar syrups.

[2]Bees confined for long periods should be fed an additional treatment 10 to 20 days after installation.

NOTE: One 9.5 gram bottle of Fumidil B (fumagillin) mixed in 100-120 gallons of light or heavy sugar syrup is sufficient to treat approximately 50 wintering colonies in the fall or 100 package colonies (1 treatment) at installation, respectively.

Mixing Light and Heavy Sugar Syrups

One hundred pounds sugar plus 12.5 gallons (U.S.) hot tap water will provide approximately 20 gallons (U.S.) light sugar syrup.

One hundred pounds sugar plus 7.5 gallons (U.S.) hot tap water will provide approximately 15 gallons (U.S.) heavy syrup.

Reminders

1. You, the beekeeper, are responsible for prevention and control of bee diseases. Fulfill this responsibility by regular examination of colonies and proper treatment.
2. You must use these chemicals properly. Maintain recommended dosages of chemicals when colonies are treated. Feed the formula in a manner that the bees will effectively accept and will feed to young larvae and to one another.
3. Apply the recommended dosage at the proper time. Do not use any of these chemicals at any time or in any manner which results in the contamination of honey which will be marketed.
4. If you think you have disease in your brood or bees, but are unsure you may send a sample of the affected brood or bees to: Section of Apiary Inspection
   Division of Plant Industry
   670 State Office Building
   St. Paul, Minnesota 55155

   Brood Sample: 4-inch square with as many affected larvae as possible.

   Adult Bee Sample: Minimum of 50 sick or recently dead bees.

   DO NOT SEAL THE SAMPLE IN A PLASTIC, TIN, OR GLASS CONTAINER. Send it in a cardboard box.

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