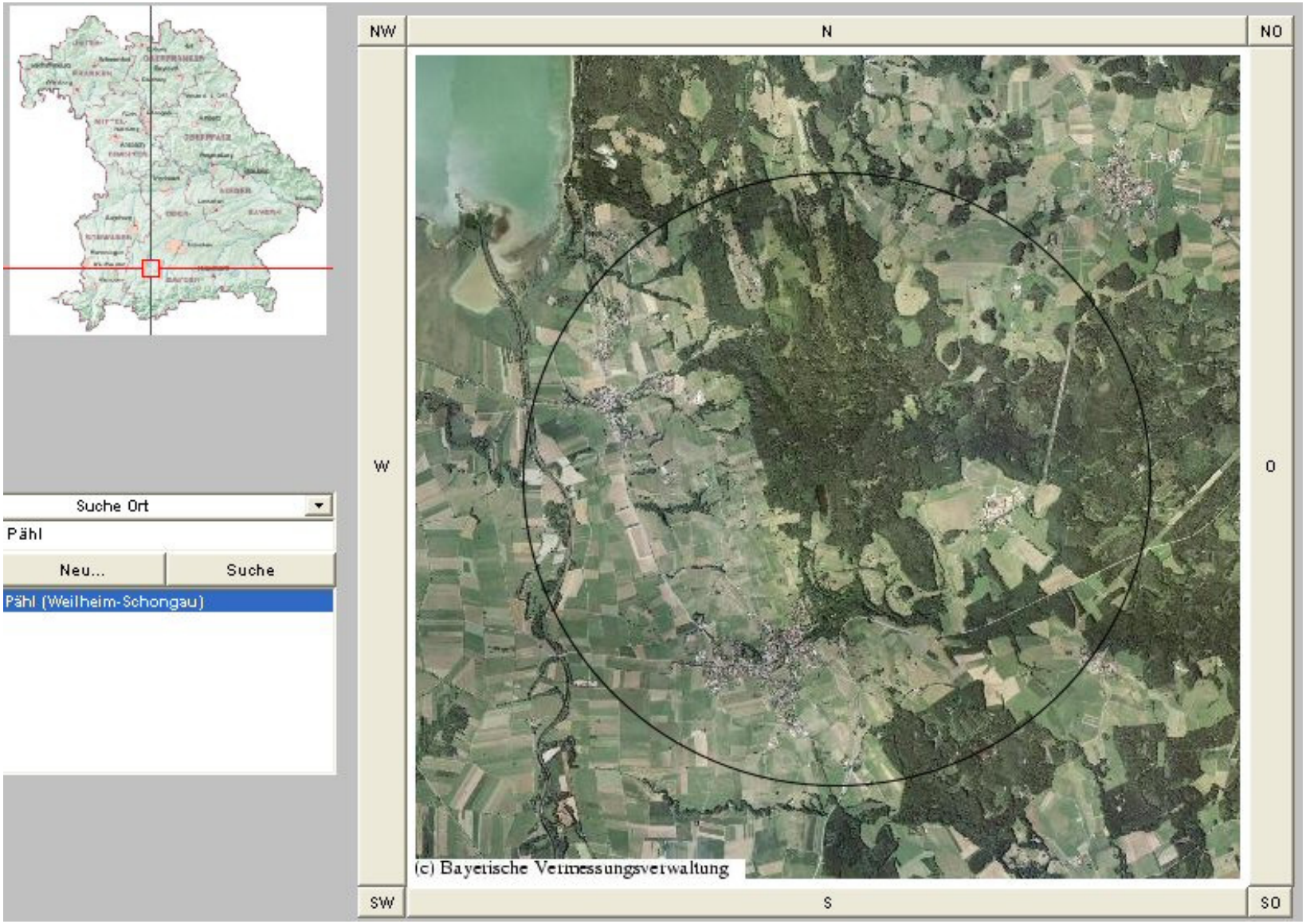
The beekeeper's perspective on medicines for bees

Walter Haefeker, President
European Professional
Beekeepers Association
(EPBA)

Unlike other farm animals bees are not kept in tightly controlled settings ...

Foraging range of at least 30 square kilometers



"Let food be thy medicine and medicine be thy food"
(Hippocrates)

- Many pathogens are always present in bee colonies.
- Ability of bees to handle natural pathogen load depends on diversity of food sources (especially pollen).
- In a healthy environment bees remain without clinical symptoms.
- Bees are a superorganism with a collective immune system.
- Neurotoxic pesticides interfere with foraging, communication, sense of smell, hygiene etc.
- Introduction of new pathogens and parasites as a result of global trade finds honey bees unprepared by evolution.
- Beekeepers need to strengthen natural defenses and provide help with the newly introduced threats.

Honey ≠ Honey

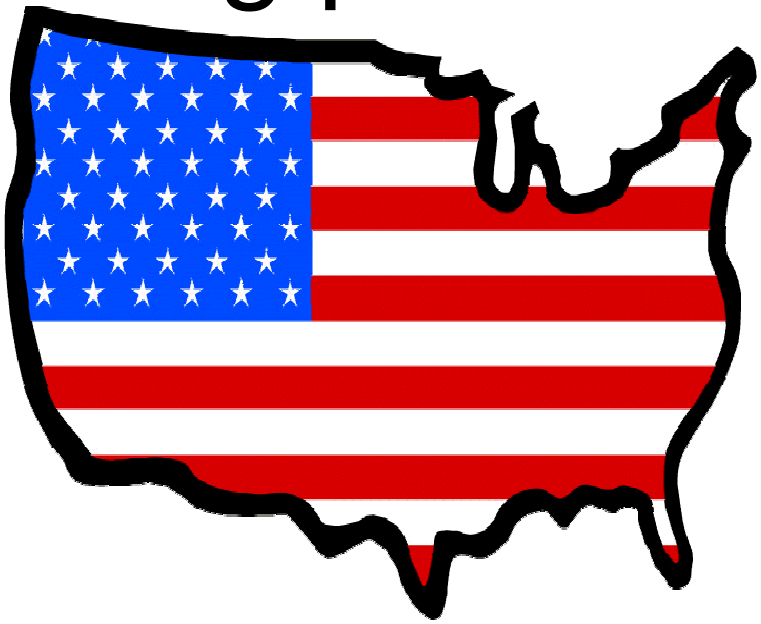
$12 / KG	$1,2 / KG

Differentiating Factors

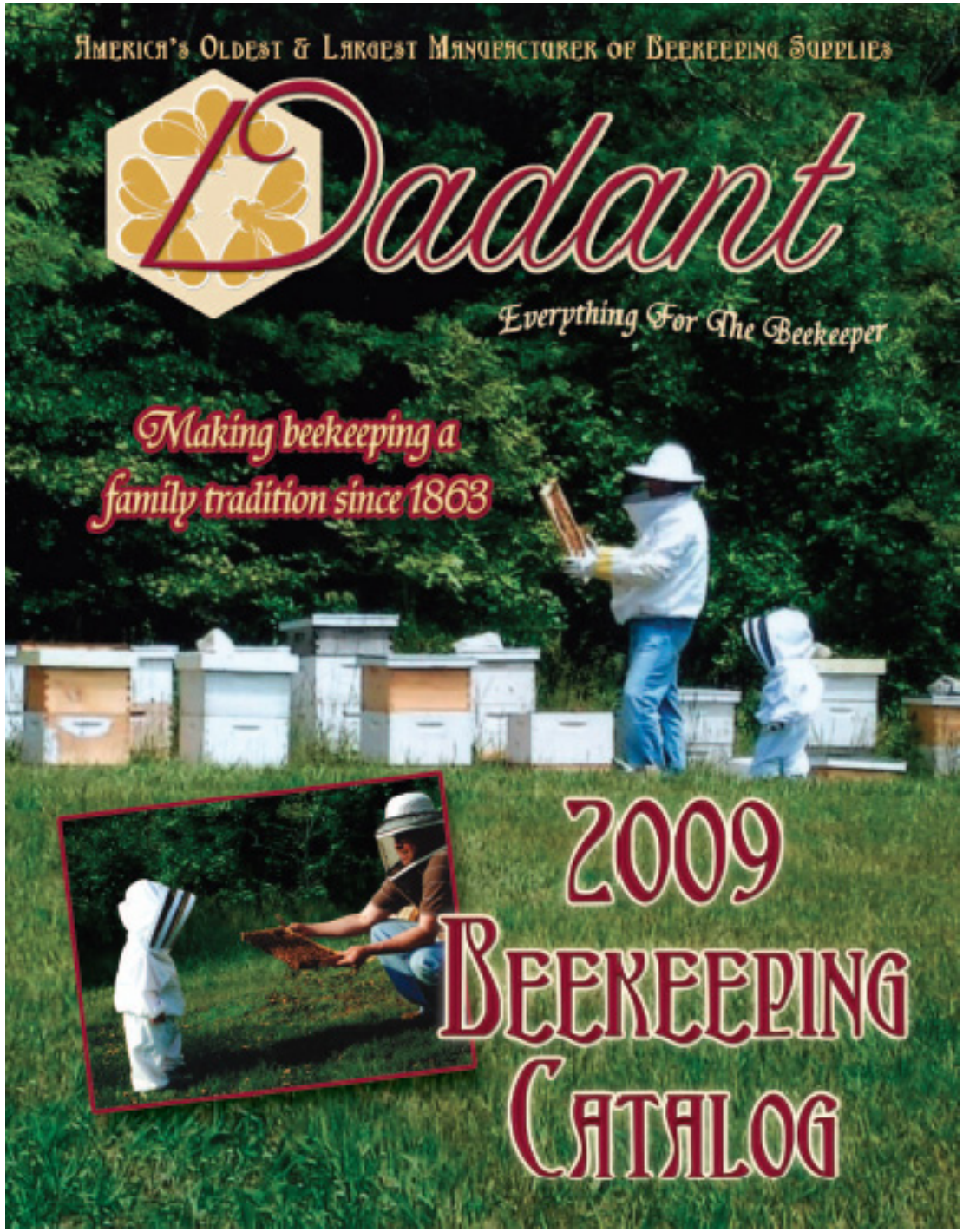
- Regional product (includes free pollination)
- Diverse flavors (diverse floral and honey dew sources)
- Natural and healthy
- Not highly processed
- Residue free or Organic
- Marketed directly to the consumer or regional store
- Answerable directly to the consumer. No way to hide behind labeling.

If the superior image of European honey is compromised, the price advantage cannot be maintained and beekeepers will go out of business!

Let's take a look across the big pond ...



… where honey is a byproduct and pollination is the main revenue source.



Wide array of medications including three Antibiotics (Tetracycline, Tylosin, Fumagillin) are available over the counter or by mail order.

MEDICATION GENERAL USAGE

The following is offered as a guideline for medication usage. Be sure to follow label direction in your treatment program.

For the beginning beekeeper, choosing the right medications and knowing when to use them can be tricky. Following is a chart we have devised to simplify and explain these treatments. If you ever have any questions in regards to what type of medication to use, call your nearest Dadant branch and they will point you in the right direction. We also suggest ordering your medications early so you will be prepared when it comes time to apply.

Medications/Usage	Length of Treatment	Method of Application	Time of Year To Apply
Apiguard *Varroa* *(Also benefits in the control of Tracheal mites)* *see pg. 51*	Two treatments: 1st: 12-14 days 2nd: 2-4 weeks	Place delivery tray on top of top bar frames. A 1/4" space is needed. Close off screened bottoms and vent holes.	Should be applied during the fall, unless infestation is severe. Temperatures 60°F-105°F. Don't apply when honey supers are on.
Mite-Away II *Varroa/Tracheal* *see pg. 52*	21 days	Apply 1 1/2" spacer to top of brood box and spacer sticks. Apply pad with holes facing downward. Be sure to close off screened bottoms and vent holes, leaving bottom entrance open.	Early Spring or Fall, prior to or after honey flow. Cannot be used with honey supers on. Recommend usage when daytime temperatures are 50°-79°F. Avoid use when temperatures rise above 79°F.
Apistan *Varroa* *see pg. 52*	42-56 days	1 strip per 5 frames of bees.	When temperatures are above 50°F, generally Spring and Fall.
Sucrocide *Varroa* *see pg. 52*	21-30 days Multiple applications are necessary.	Spray down every frame in brood boxes and supers. Spray must contact bees to work.	Apply as needed. Can be used with honey supers on. Spring, Summer, Fall
Mite-A-Thol/Menthol *Tracheal* *see pg. 55*	14-28 days	80°F or below, place on top bars of hive body. 80°F or above, place on bottom board.	Recommended to apply in Spring. Temperatures must be 60°F - 95°F.
Terramycin *Foulbrood* *see pg. 48*	Three treatments 4-5 day intervals	Sprinkle recommended dosage around edges of brood box on top bars of frames. Once a week for 3 weeks.	Treat Spring and Fall.
Tylan *Foulbrood* *see pg. 48*	3 treatments, 7 days apart.	Sprinkle recommended dosage around edges of brood box on top bars of frames. Once a week for 3 weeks.	Treat Spring and Fall.
Gardstar *Small Hive Beetles* *see pg. 49*	Apply to ground 24-48 hours prior to hive placement with sprinkle can or pressure sprayer.	Highly toxic--if applying around hive where beetles are present. Sprinkle can must be used.	Apply when needed.
Fumagilin *Nosema* *see pg. 55*	Varies with rate of feed consumption.	Mix in with sugar syrup.	Treat Spring and Fall.
Paramoth *Wax Moth* *see pg. 55*	3-4 weeks	6 Tbsp. for 15 supers, duct tape all openings making as air tight as possible. Re-apply crystals as needed. Air out supers prior to placing on hive 1-2 weeks.	Apply as needed, particularly in warm weather.

NEW

HIVE INSPECTION SHEET NOTEPAD

Hive Inspection Sheets to help record hive activity. For further description please see page 40.

M01940 Hive Inspection Sheet Notepad, Ship Wt. 1 lb **$2.50**

Easy access to medicines

FOULBROOD

DISEASE PREVENTION FOR HEALTHY BEES

TETRA-B MIX

—No Hassle Pre-Mixed Terramycin™—

Handy Resealable 2 lb. Shaker Can and Bulk 10 lb. or 50 lb. Bags.

M00162

- Ready To Use
- No Mixing
- Convenient
- Effective

* For best results always read and follow label directions.

Tetra-B Mix is a ready-to-feed mixture containing the antibiotic Terramycin. Recommended as an aid in the prevention of American and European foulbrood. May be used for fall treatment of colonies prior to winter or for the spring treatment of overwintered colonies. Spread over the top bars of the frames in each section of the brood nest. All use should stop at least four weeks prior to a surplus honeyflow.

M00162 2 lb. Shaker Can, Each, Ship Wt. 3 lbs. **$9.50**

10 lb. Bags, Each, Ship Wt. 11 lbs.

M00161 1-4 Bags. **$16.50**
5-49 Bags **$15.15**
50 & Up Bags. **$14.55**

50 lb. Bags, Each, Ship Wt. 52 lbs.

M00163 . . . . . **$69.50**

TYLAN®

(tylosin tartrate)

Tylan is a newly approved antibiotic for treatment of foulbrood in honey bees. Labeled to legally use only as a dust, tylosin should be mixed at a rate of 200mg of tylosin to 20 grams of confectioners powdered sugar The 100g bottle when mixed with 22 lbs. of powdered sugar will make 500 doses. Approximately 3 tablespoons of mixture per dose to be administered weekly for 3 weeks by dusting over the top bars of the brood chamber.

M01700 Tylan (soluble) 100g, Each, Ship Wt. 1 lbs.
Qty 1-4 . . . . . **$42.50**
Qty 5-9 . . . . . **$39.00**
Qty 10+. **$38.50**

TERRAMYCIN™

Terramycin antibiotic is a proven treatment for American and European Foulbrood. Blend with powdered sugar to make your own medication. Early spring treatment is recommended with three one tablespoon applications at 5 day intervals. Spread over top bars of frames in brood nest area. Never treat 30 days before or during a nectar flow. TM-10.

* The future availability of M00174 is unknown at the time of printing. We recommend M00162 Tetra-B Mix as a replacement should it become unavailable.

M00174*

—Concentrate—

M00176

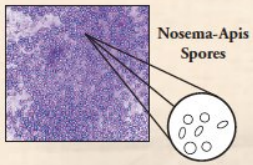
Terramycin™ 6.4 oz. Packets*
(50 feedings per packet) M00174
1-4 Packets . . . . . **$6.25 ea.**
5-24 Packets . . . . . **$5.55 ea.**
25-61 Packets . . . . . **$5.40 ea.**
62 & Up Packets. . . . . **$5.00 ea.**

* Shipping weight 1 lb. per packet.

Terramycin 100MR
A bulk pack used by commercial beekeepers for treating large numbers of colonies. A 50 lb. bag when properly mixed with sugar feeds 4000+ colonies. 50 lb. Bag
M00176 , Ship Wt. 53 lbs. **$425.00**

NOSEMA

Fumagilin-B is the only registered antibiotic effective in the control of Nosema. Feed in the fall, again in spring and for all newly installed package bees. *For best results always read and follow label directions.



Nosema-Apis Spores

Available in 3 sizes

Nosema disease causes more small honey crops than any other bee disease. It quietly robs the colony of strength and vitality. Nosema is especially prevalent in overwintered colonies in spring and in package bees. ***Fumagilin-B*** is the only registered antibiotic effective in the control of Nosema. Feed in the fall, again in spring and for all newly installed package bees.

Fumagilin-B ½ gram
5 to 6 feedings
Each, Ship Wt. 4 oz.
M00171 1-11 . . . . . **$16.50**
12 Up **$15.50**

Fumagilin-B 2 gram
20-24 feedings
Each, Ship Wt. 1 lb.
M00173 1-39 . . . . . **$38.75**
40-111 . . . . . **$36.75**
112 Up **$34.75**

Fumagilin-B 9½ grams
95-114 feedings
Each, Ship Wt. 2 lbs.
M00172 1-11 . . . . **$124.95**
12-17 . . . . **$122.95**
18 Up. . . . . **Call for pricing**

TRACHEAL MITES

Menthol, a natural product, is effective in killing adult tracheal mites. Menthol is a natural desiccant which naturally causes the microscopic tracheal mite to lose body fluids causing death.

Not available at all Dadant branches

—A Natural Product—

Mite-A-Thol
M001781 Single Package,
Ship Wt. 1 lb. . . . . **Only $4.50***

Package of One Dozen 50 Gram Complete Treatments
M00178 Ship Wt. 3 lbs per pkg.
Package of 12-50 gram Doses,. **Only $43.50***
10 Packages & Up, ... **Only $41.50***

WAX MOTH

Para-moth—A dry crystal that does an excellent job of keeping wax moths and their larvae under control. Place on top of a stack of stored supered combs.

Not available at all Dadant branches

For 1 and 5 lb. quantities, branch pick-up only is available. If shipped, product will ship from Hamilton, IL. **Additional charges may apply.**

M00140 1 lb., Ship Wt. 2 lbs. . . . **$9.95**
M00141 5 lbs., Ship Wt. 6 lbs. .. **$28.50**

M00142 35 lbs., Ship Wt. 38 lbs . . **$122.00**
For 35 lb. quantity truck freight charges will be at least $100 plus a $15 hazardous charge. Call for exact rates.

Wax Moth Damage

Easy access to medicines

VARROA MITES

APIGUARD®
A Vita-Europe Ltd. product.
by Dadant & Sons, Inc.

The natural way to healthy bees

Foil pack contains 10 individual 50g treatments ready for application.

There may be other Thymol products on the market today, we are pleased to offer Apiguard® for Varroa Mite control. With proven efficacy it is the best thymol product offered in the U.S. today.

M01480 Apiguard® c/10 Foil Pack, Ship Wt. 2 lbs
1-9 ..... $29.75
10 + ... $27.50

Get on the Rotation Treatment Program!

If you have b
several years,
trying to elim
varroacide in
treatment for
Start a rotatio
safeguard the

A New
Ag

Varroa is still "ene
in some areas to o
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VARRO
NATURAL

A slow release

- A natural and
- Through thou
85% to 95% w
- It respects both
- Encourages the
number of rela
- Resistance is c
- Ease of use: 2 x
of 14 days, in s
- Best results oc
temperatures a
- Though regist
proven to effec

Place the dosing
spacing between
dose 14 days afte

VARROA MITES

APISTAN™ STRIPS

Apistan™ strips are a product developed specifically to control Varroa mites in honey bee colonies. There is no more convenient chemical method for beekeepers to use to kill Varroa mites. *For complete consistent control of Varroa mites use Apistan™ according to label directions.*

Treatment For 5 Hives

M001261 Apistan™ Strips,10 per pkg., Ship Wt. 1 lb. per pkg. $25.25
10 or More Packages—per pkg. $24.25

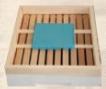
Treatment For 50 Hives

M00126 Apistan™ Strips, (treatment for 50 hives),100 per pkg., Ship Wt. 2 lbs. per pkg. $185.95
6 or more packages—per pkg. $179.95

WE ARE PLEASED TO BE A DISTRIBUTOR FOR HIVASTAN, A NEW VARROA MITE CONTROL PRODUCT FROM CENTRAL LIFE SCIENCES. HIVASTAN IS NOW APPROVED FOR USE UNDER SECTION 18 RULES. PLEASE VISIT THEIR WEBSITE AT WWW.CENTRALAPIARY.COM FOR FURTHER INFORMATION AND A CURRENT LISTING OF STATES WHERE IT IS APPROVED FOR USE...

MITE-AWAY II™

Single Application Formic Acid Pads Pre-soaked & Ready to Use!



M01347 Mite-Away II™ pail of 10 packs, Ship Wt. 6 lbs.
Qty 1-3. ..... $39.95
Qty 4-7. ..... $38.95
Qty 8-19. ..... $37.95
Qty 20-28. ..... $36.95
Qty 29+ ..... CALL

M01347

Mite Away II™ placed on hive using rim and sticks. *Rim & Sticks sold separately at right.*

B10004 Rim & sticks come unassembled. Ship Wt. 3 lbs. . . $2.95

Mite Away II is a formic acid treatment for the control of varroa and tracheal mites. It should be used as part of an integrated pest control management program. One single application pad can be used to treat 6 - 20 frames of brood. To apply you must place the pad on top of two spacing sticks which go on top of the brood frames. Place the pad with the holes facing down to help the formic acid circulate throughout the hive. All holes must be sealed except for the bottom hive entrance, which must be open during the entire treatment. Mite Away II should be used when day time temps are in the range of 50 - 79 degrees F. If daily temps exceed 82 degrees F in the first seven days of treatment, you must remove pads. Store pads in original container until heat wave is over. Treatment of hives when temps exceed 82 degrees can cause major damage or loss of colonies. Brood mortality may occur for up to 14 days during the start of treatment with brood rearing returning to normal after treatment. DO NOT APPLY WHILE HONEY SUPERS ARE ON. Allow at least 2 weeks from treatment to the harvest of honey from the hive. A 1 ½" spacer rim and two small spacer sticks are required. Safety equipment must be worn when treating with Mite Away II. Read all safety manuals prior to use.

friendly
VARROA MITE
treatment

SUCROCIDE™

SUCROCIDE™ is non-toxic to the beekeeper and your bees. It kills varroa mites on the bees but doesn't harm the bees. Sucrocide™ is concentrated and needs to be mixed with water. Use 3 tablespoons of this miticide to 2 gallons of water. You can use a garden-type hand sprayer or backpack sprayer to apply to the bees. Use broad fine setting on sprayer. Bees must be completely wetted to kill the mites. Sucrocide™ must come in contact with the mites to kill them. Apply at first sighting of varroa mites. For best results apply in early morning or late evening to cover field bees. Repeat applications at intervals of 7 to 10 days, up to three times per infestation, in order to kill varroa mites emerging from brood cells. **One pint treats approximately 29 2-story hives.**

* For best results always read and follow label directions.

* Not registered in all states.
Sucrocide is registered only in the following states: CA, GA, HI, MO, MI, NY, NC, OH, TX, WA

M00139PT Sucrocide™ pint, Ship Wt. 3 lbs
Qty. 1-11 ..... $15.95
Qty. 12-47 ..... $12.95
Qty. 48+ $9.95

For an integrated pest management system you should alternate mite treatments.

HIVE BEETLES

Small Hive Beetle
Enlarged to Show Detail

WEST SMALL HIVE BEETLE TRAP

The 1st Small Hive Beetle Trap That Works!

NO TOXIC CHEMICALS TO HARM HONEY, WAX, BEES, OR YOU!

The West SHB Trap was designed to sit on the bottom board just where SHB naturally like to hide. The Trap consists of a tray that you partially fill with a small amount of vegetable oil and a specially designed lid that is covered with almost 300 small slots. The SHB, in looking for a place to hide from the Honey Bees trying to catch them, head for the slots as an escape route which is a dead end that leads directly to the tray filled with thick Non-toxic Vegetable oil. The SHB falls into the vegetable oil, are coated with it, suffocate, and die. It's just that Simple!

—No Chemicals —No Hassle —No Problem

Component Diagram

M01540 Beetle Trap Complete, Each, Ship Wt. 5 lbs $11.95
M015401 Side Cleat for Beetle Trap, Each, Ship Wt. 2 lbs ..... $.85
M015402 End Cleat for Beetle Trap, Each, Ship Wt. 2 lbs ..... $.85
M015403 Cleat Set for Beetle Trap, Each, Ship Wt. 2 lbs $2.49
M015404 Beetle Trap Tray w/ Cover, No Cleats, Each, Ship Wt. 3 lbs $9.99

AJs BEETLE EATER

AJs Beetle Eater is an ingenious design from our friends down under. Fill the trap half full of vegetable oil and place between top bars.

M01541 AJs Beetle Eater, Ship Wt. 1 lb., each
1-4 ..... $5.00
5-49 ..... $4.00
50 & Up $3.75

CHECKMITE*

This Varroa Mite control product has been granted a temporary Section 18 EPA Emergency Use Approval, and is an effective in-hive treatment for small hive beetles. Follow label directions exactly. This is a very powerful compound. Each state approves the use of Checkmite and application requirements. Check with branches or home office for availability and restrictions before ordering.

M00149 Checkmite, Carton of 10. Ship Wt. 1 lb. . . . $37.00

**May not be available at all Dadant Branches*

GARDSTAR® 40% EC

GardStar
Quart
Each, Ship Wt.4 lbs.
M00151 . $114.95

GardStar
4 oz. Bottle
Each, Ship Wt. 2lbs.
M00150 . . $28.00

Not available at all Dadant Branches

This pest is spreading in the United States. Uncontrolled populations of small hive beetle larvae can devastate weak colonies and make a mess of stored honey supers and honey processing facilities.

USDA tests have shown that when used as a **ground drench**, GardStar 40% EC is highly effective at killing the small hive beetle larvae. It is also effective against emerging adult beetles, with a residual effect of two months. It is also approved for general pest control around the **outside of honey houses and honey processing premises.** Read and follow label directions. *Not for use in honey bee colonies.

Though in many areas varroa have become tolerant to the active ingredients in Checkmite it is still a useful remedy in the treatment for the small hive beetle.

Honeybees Vanish, Leaving Crops and Keepers in Peril

Next Article in Business (1 of 31) »

Ann Johansson for The New York Times

Isaias Corona of Bradshaw Honey Farm, near Visalia, Calif., putting corn syrup — bee food — into hives. The farm has lost about half its bees.

By ALEXEI BARRIONUEVO
Published: February 27, 2007

MOST POPULAR

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9. In the Stent Era, Heart Bypasses Get a New Look

Has easy access to medicine been the answer for US beekeepers?

- The United States suffer among the highest rate of colony losses in the world.
- Pollination fees have skyrocketed due to dropping availability of honey bee colonies.
- There may be less the 2 million honey bee colonies left in the US.
- Just for the 725,000 acres of almond crop in California 1,4 million colonies are needed.

How would beekeepers like to deal with European and American Fould Brood?

- Don't mask problem with antibiotics.
- Use shook swarm method.
- Move treated hives to area with good nectar flow.
- Lab test pure bred queens for resistance against brood diseases before introduction to beekeepers.
- Avoid draconian measures, that drive affected beekeepers underground or out of business.
- Learn from positive experience in New Zealand.

http://www.haefeker.de/cgi-data/Faulbrut_Neuseeland_web.avi

How would beekeepers like to deal with Varroa Destructor?

- Hives come in many shapes and sizes
- Beekeeping in many climate conditions
- Organic acids (naturally occurring in honey) are effective, but ideal application difficult to achieve without additional tools.
- Formic acid: Need test strips to verify right concentration was reached and maintained.
- Investigate non-chemical approaches, like varroa antagonists (virus) and molecular vaccines (DNA plasmids)

How would beekeepers like to deal with Nosema?

- Nosema spores always present.
- Unclear, if there is actually a significant difference in virulence between nosema apis and nosema ceranae.
- Clinical nosema in most cases indicator of something else gone wrong.
- Address root causes of nosema rather than treating this symptom.
- Don't introduce toxins that are synergistic with nosema into the environment (Bt-Crops).

How would beekeepers like to deal with viral infections?

- A whole range of viruses are always present.
- Load of viruses correlated with intensive agriculture.
  - Soon to be published research in France shows lowest colony losses in downtown Paris …
  - Israeli acute paralysis virus is a reciprocal host-virus. Pesticides can destabilize genome of host. (Apimondia 2009)
  - Canadian researchers found significantly higher viral loads in honeybee colonies in areas with intensive corn cultivation. (Apimondia 2009)

Conclusions

- Health of honey bees is reflective of the surrounding environment.
- Medicines are no substitute for making sure the environment does not become hostile to bees.
- Medicines are no substitute for good beekeeping practices.
- Beekeeping methods need to take advantage of natural defenses and genetic resources within bee populations.
- Much room for improvement in application of organic acids to combat varroa.
- Much room for improvement in AFB strategy.
- Additional medicines may be welcome as last resort but the contamination of bee products is a very important consideration.
- Many beekeepers especially the rising number of organic beekeepers will not use products that may compromise their bee products.