STAHLMAN BEEKEEPING NOTES FOR 2025

2025 Vol. 7
issue # 17

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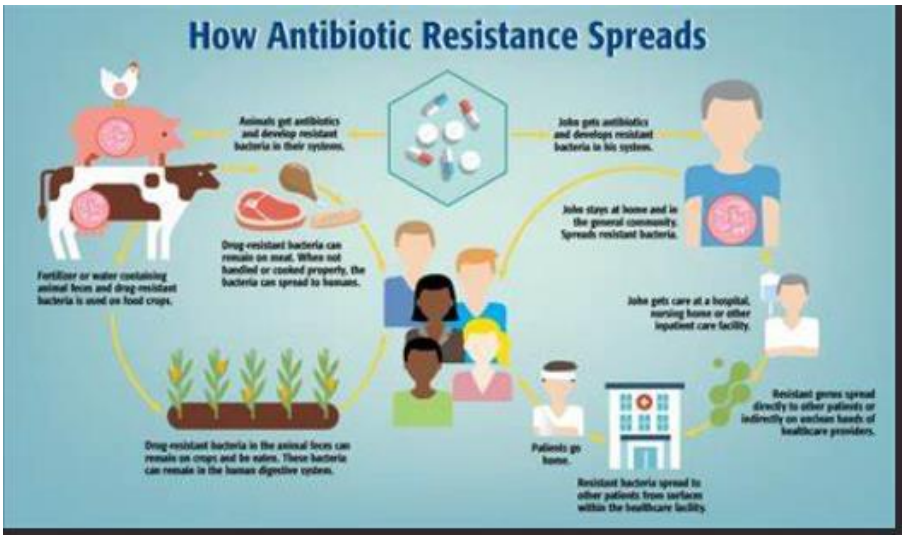
Published free as a public service to anyone interested in honeybees. Email me to be added to my mailing list. stahlmanapiaries@aol.com

Antibiotics

Pre – 2017 oxytetracycline/Terramycin could be purchased at any farm supply store or bee catalog in various amounts and strengths – as one of the least expensive of all treatments for bacterial diseases. Its use was widespread leading to resistance and contamination in food from chickens, hogs, cattle, and honeybees. Thus, humans eating food incorporating traces of antibiotics were finding the products such as penicillin being less effective treating humans.



I found this poster on antibiotic resistance and how it has been a problem to those that eat products from farm animals including honey. Maybe you have noticed TV commercials that point out that their chickens are never given antibiotics.

And how did honeybees get into this picture? Below is a photo that I personally took in the 1990's of a commercial bee operation that bought 50-pound bags of Terramycin to mix with powdered sugar to treat every colony in a bee yard. The standard recommendation from bee books at that time had this to say about treatment (1985) First Lessons in Beekeeping by Dadant. By the way

The use of Terramycin® for the prevention of American foulbrood has been successful in many cases. Use ½ teaspoon full of **TM 25** to ¾ teaspoonful of powdered sugar. Dust a teaspoon of the mixture over the brood combs 2 to 3 times in early spring, with intervals of 7 days to 10 days between treatment. Ø Out of Date Information

this booklet was widely published and considered a must for new beekeepers. No beekeeping book published since 2017 would make this recommendation.

For some beekeepers, if a teaspoon worked why not a cup full of TM 25 and powdered sugar dusted over the brood chamber? This is a common thing that people do – if a little bit works why not use more and get better results!

It was not a cure because American foulbrood in the spore stage can live for many years. A.J. Cook in his Manual of the Apiary (1878) wrote "No bee malady can compare with this malignancy." He later found that spores collected from infected colonies were still viable 50 years later. This one disease is responsible for laws passed in the early 1900's establishing Apiary departments and inspection services to control the spread of the disease.

By 2023, the following directive was published regarding who could buy antibiotics, and VFD (Veterinary feed directive) would be required. This was a shock to many beekeepers and veterinarians alike. Suddenly and without their consent, veterinarians were suddenly put into the position of working with beekeepers.

Livestock owners (bees are livestock and produce a food product) need a prescription from a veterinarian if they want to continue to have access to antibiotics and a prescription will be required regardless of where they are purchased. Products should be labelled with "Caution: Federal law restricts this drug to use by or on the order of a licensed veterinarian."

> **Antibiotics approved by the FDA can be used to proactively manage infection and endemic disease occurring in the US and Canada. These target 2 common bacterial diseases: American foulbrood (AFB) and European foulbrood (EFB).**
> **There are a dozen antimicrobial drugs approved by the FDA for use in honeybee colonies for AFB and EFB. These all rely on 1 of 3 antibiotics: oxytetracycline, tylosin and lincomycin. These medications—which are also approved for use in other animal species—are required to be ordered or administered by a licensed veterinarian through a prescription or a veterinary feed directive (VFD).**

The rest of the story: **This past week I was invited to help instruct students in the North Carolina State University College of Veterinary Medicine. The staff included instructors from the Department of Agriculture (county bee inspector – retired), instructors with commercial experience, visiting professors and professional medical staff of the North Carolina State University. Class began with a roll call at 8:00 a.m with lectures till noon and the rest of each day was then spent in the bee yards until in some cases almost 5:00 p.m. -- Monday April 21 to Friday April 25. Let me say, the students started the class with little preparation to work bees. They were required to read the text in their off hours and the text was only for general reference to**

what most beekeeping schools teach. Students were expected to know the basics before classes began.

<u>Not included in the instruction were things like extracting, studying products, making splits etc.</u>

So, what do students studying to prepare to be vets do? They received basic beekeeping knowledge – equipment used, working and inspecting hives, honeybee castes, development, brood nest, sourcing bees, seasonal changes and feeding bees, resources the veterinary health and services offer, use of sensors and broodminder apps, Diseases and Pests, Darwinian beekeeping, Apiculture, HBVC (Honey Bee Veterinary Consortium), and the role of the Veterinarian, Bee Anesthesia, Case studies, and swarming. Those were the topics covered in the morning sessions. Afternoon sessions required each student to reinforce what was covered in the lecture sessions by going into bee colonies to see first hand what to expect if they were called upon to inspect a hive of bees. They were exposed to what is good and normal to the bad an ugly of what one can expect from a colony.

Students during one of the class room sessions. A typical day was a debriefing of the previous day activities beginning at 8:00 a.m.

This was then followed by three lectures lasting about an hour each with short breaks between.

Dr. Spoo is pointed out by the red arrow. The class was limited to 20 students.

Students worked in groups of three – each member of the group was involved with examining frames and making notes of what they observed and quizzed by mentors like myself about what they were seeing.

Although fully protected, several of the students removed gloves to examine frames.

This is one of my favorite photos. Just getting started in the bee yard.

Eventually the hives got a bit bigger and this time they are about to start taking off honey supers to examine the brood chamber. Note the two-frame queen nuc in this photo. The students were exposed to checking them as well for virgin or mated queens.

Mentors stepped in on occasion to help students and were present to answer and ask question. Students learned that working in bee suits is a bit hot on a sunny 80°F day.

The last photo is of some of the experts involved in teaching. Julie A. Balko, VMD, DACVAA Associate Professor of Anesthesiology, NCSU, College of Vet Med shown putting bees to sleep, Jeff Applegate, DMV specialist in Avian and Exotics animals at Nautilus Hospital in New Jersey, and Wayne Spoo, DVM, DABT, DABVT Associate Professor of Apiary Medicine, NCSU, College of Vet Med taking pictures of containers holding honey bees.