UTAH STATE AND COUNTY COOPERATIVE

Apiary Program

ESTABLISHED 1892

UDAF

2016 Summary of State Inspections & Program Accomplishments

Utah Apiary Program

- Utah a pioneer in honey bee health
- The esteemed entomologist A.J. Cook organized the Utah Beekeeper's Association
- The organization lobbied the territorial legislature to pass Utah's first bee law in 1892
- Utah has one of the oldest continuously operating programs in the country

Professor A.J. Cook
Michigan Agricultural College
Used with Permission
Michigan State University

Honey Bee Health

- High annual losses continue
- Problems in beekeeping are complex
  - Varroa mite (*Varroa destructor*)
  - Diseases
  - Nutritional issues
  - Pesticides
- Integrated strategy designed to mitigate these problems

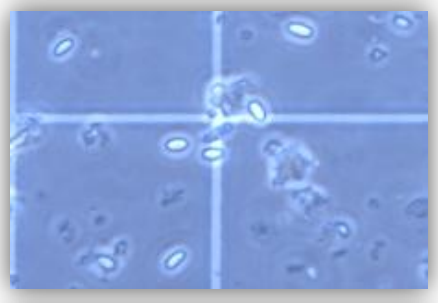
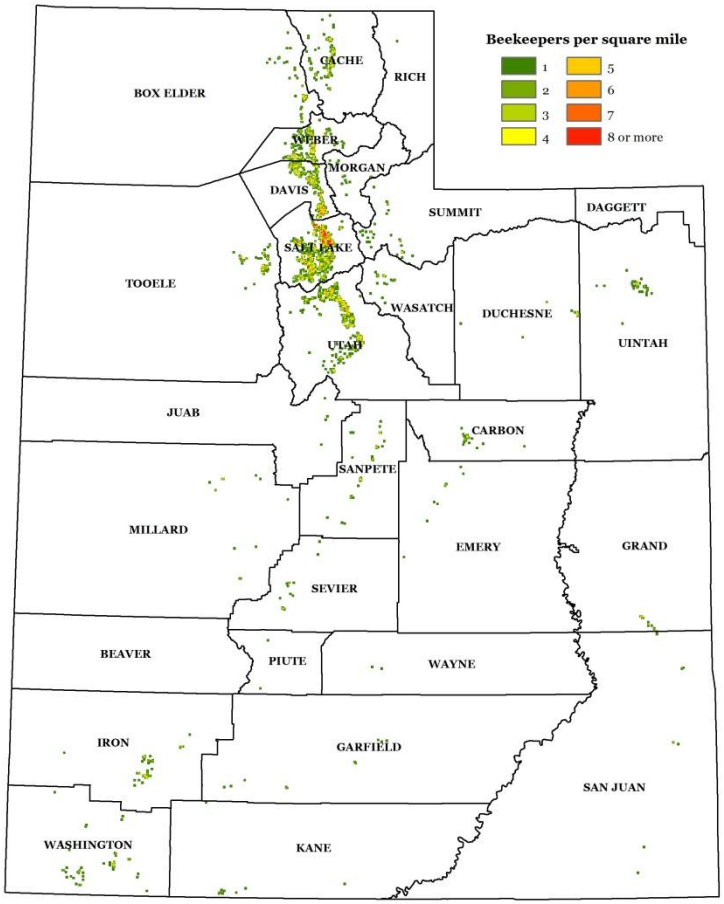


Photo credits: 1) Scott Bauer, USDA ARS
2) Katie Lee, Bee Informed Partnership
3) Keith Weller, USDA ARS

Registered Beekeepers

Utah Beekeepers Per Square Mile 2016



State Inspections

- Approximately 180 apiaries statewide
  - 12% Migratory
  - 88% Stationary

Kristopher Watson, Utah Department of Agriculture and Food

State Inspections

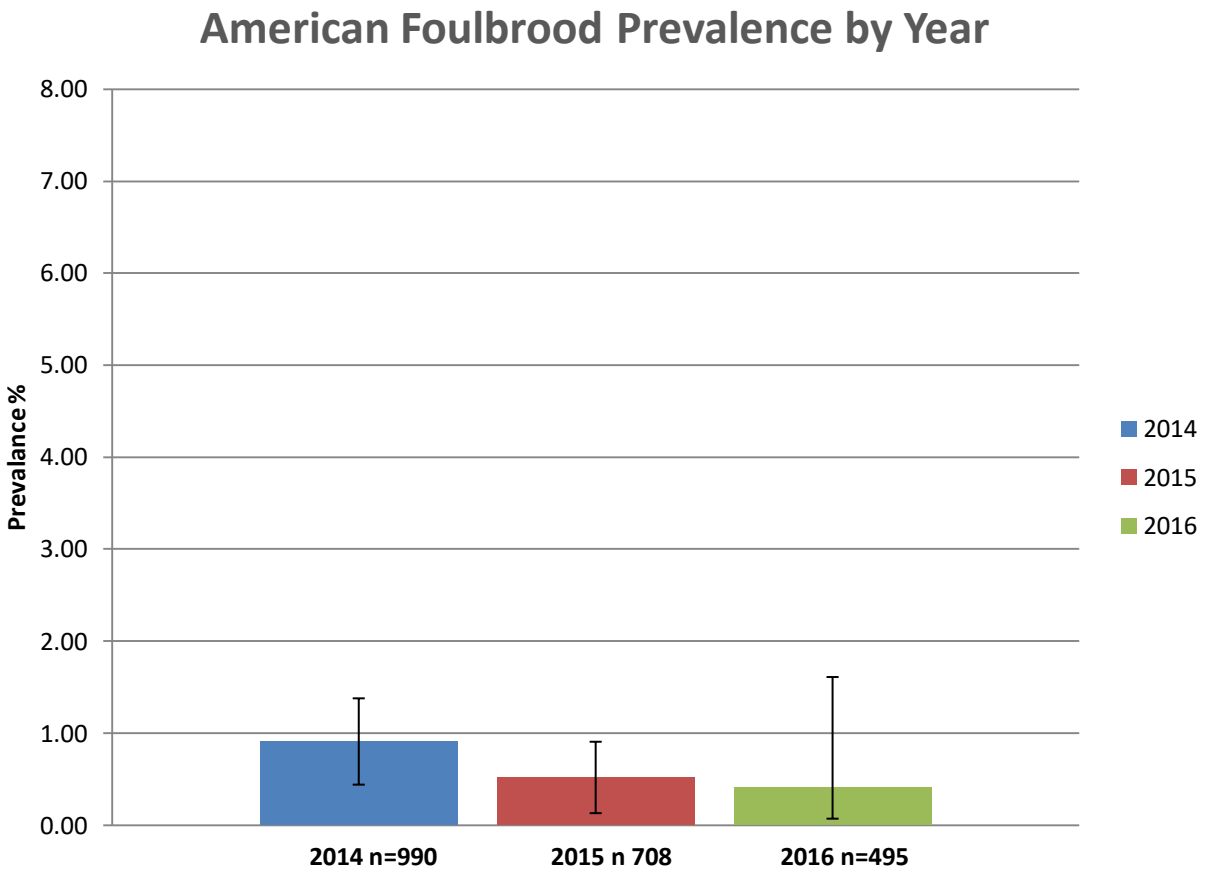
- First of its kind winter inspection in the nation
- Utilized FLIR infrared camera technology
- Over 70 beekeepers participated

Stephen Stanko, Utah Department of Agriculture and Food

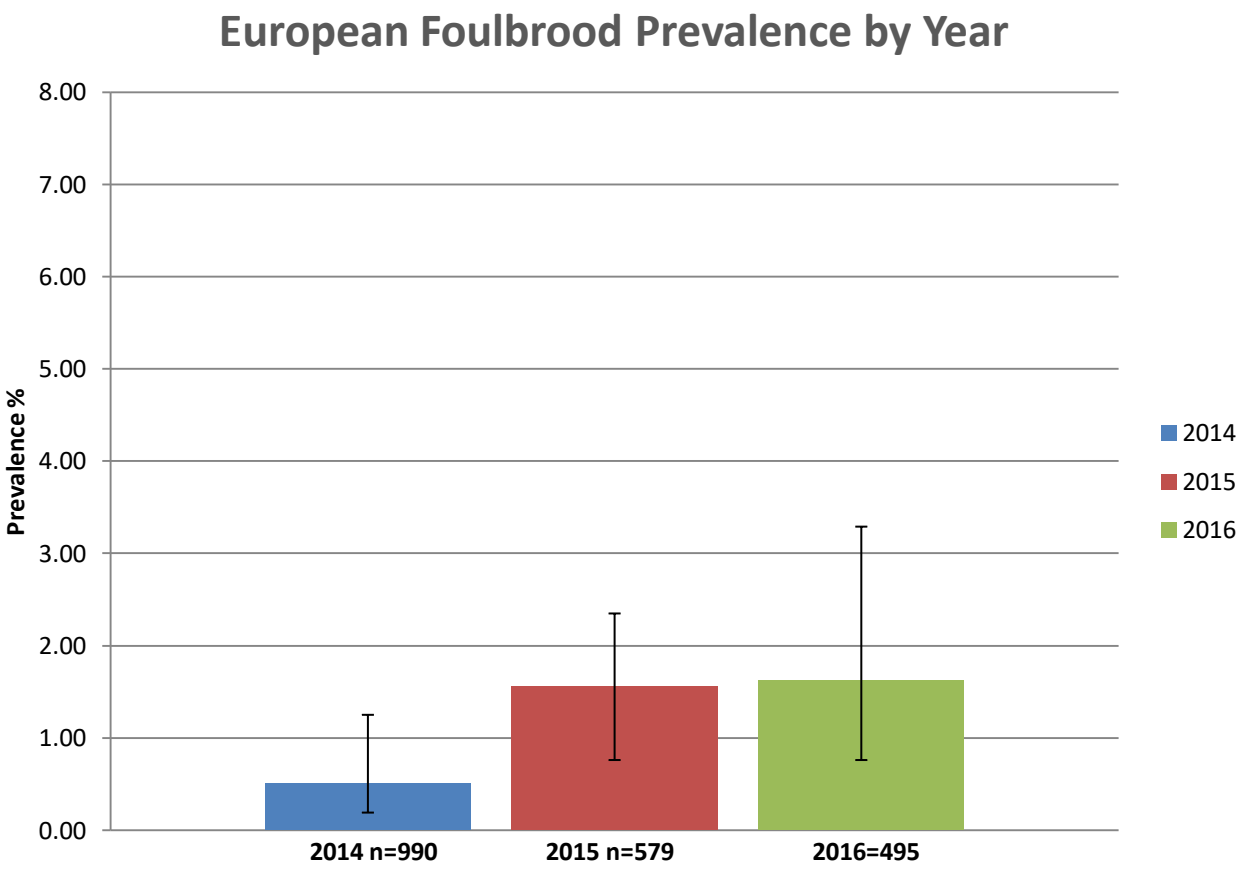
Flir.com

Caressa Pratt, Utah Department of Agriculture and Food

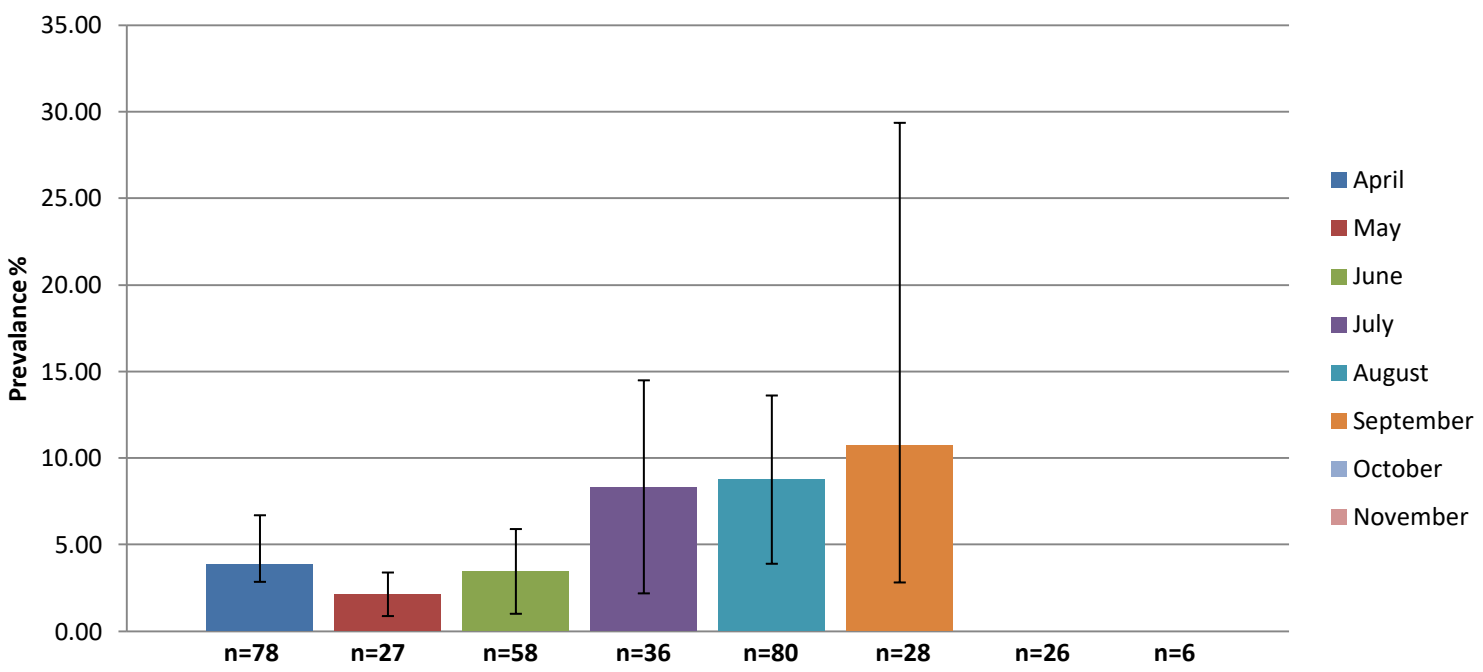
American foulbrood



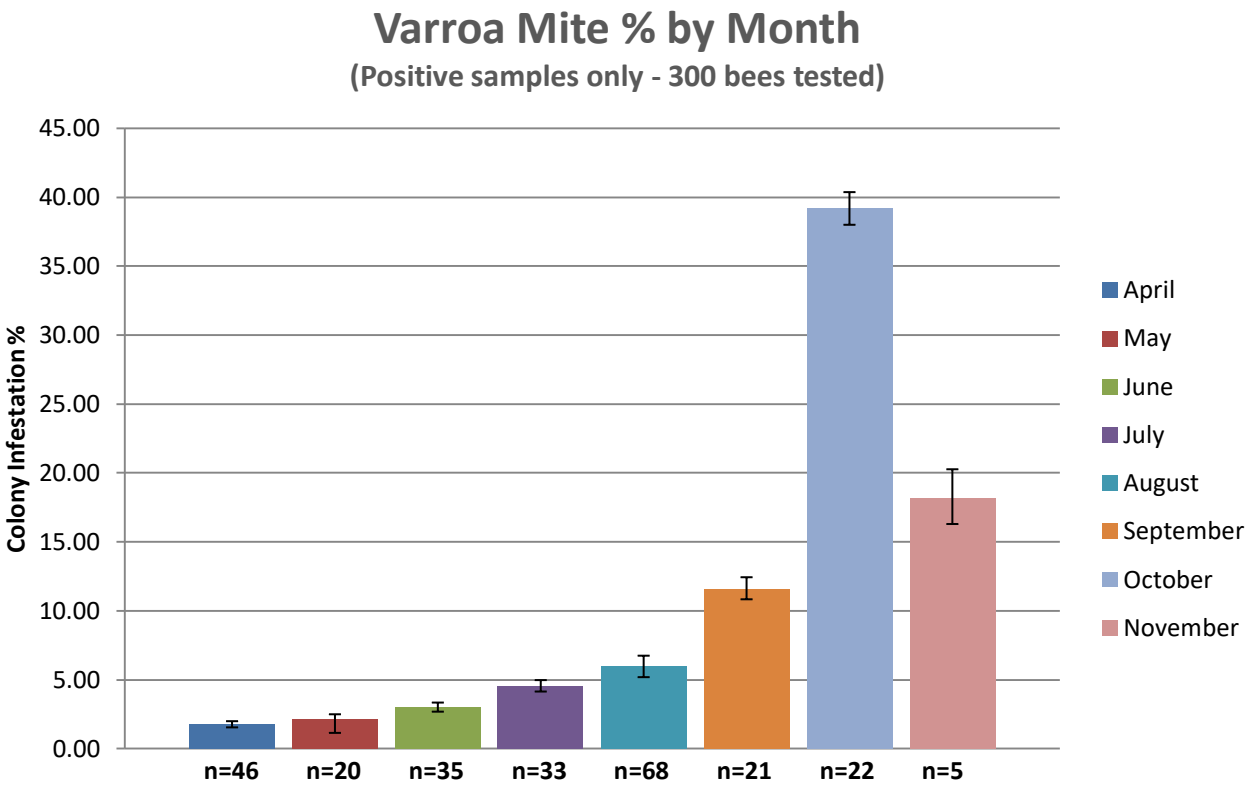
European foulbrood



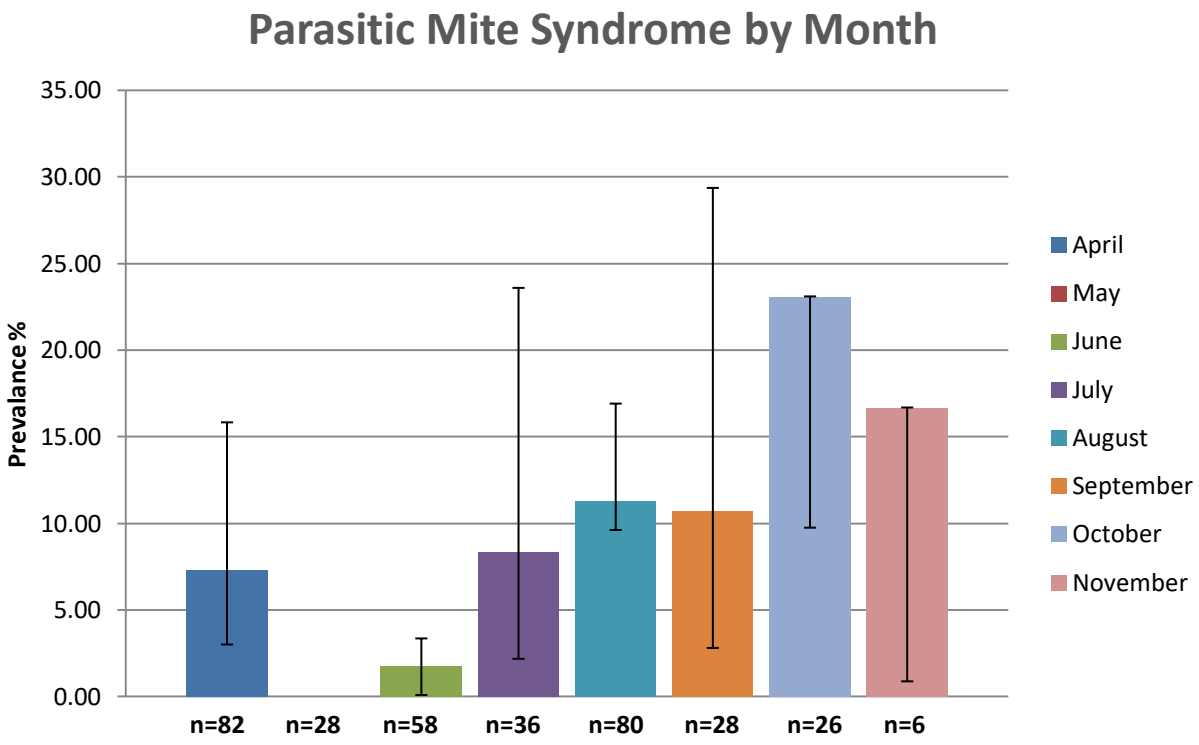
Chalkbrood


2016 Chalkbrood Prevalence by Month
Prevalance %
35.00
30.00
25.00
20.00
15.00
10.00
5.00
0.00
n=78
n=27
n=58
n=36
n=80
n=28
n=26
n=6
April
May
June
July
August
September
October
November

Varroa Mite


Varroa Mite % by Month
(Positive samples only - 300 bees tested)
Colony Infestation %
45.00
40.00
35.00
30.00
25.00
20.00
15.00
10.00
5.00
0.00
n=46
n=20
n=35
n=33
n=68
n=21
n=22
n=5
April
May
June
July
August
September
October
November

Parasitic Mite Syndrome

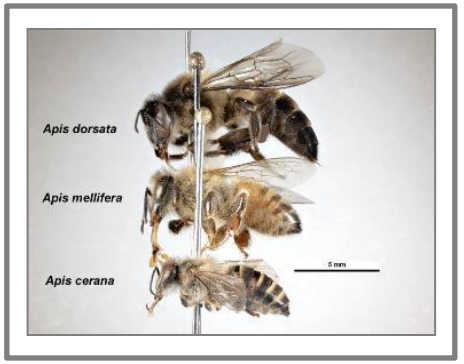


APHIS Health Survey

UDAF collected samples for the
2016 APHIS Bee Informed Health Survey

- The primary objective is to confirm the absence of exotic pests and pathogens in the United States.
  - Tropilaelaps mite (*Tropilaelaps clareae; T. mercedesae*)
  - The Asiatic honey bee (*Apis cerana*)
  - Slow Bee Paralysis Virus
- The secondary objective is to evaluate overall honey bee health
- 8 hives per apiary were sampled

Varroa mite (left) &
Tropilaelaps (right)
Photo by I.B. Smith Jr., USDA-BRL



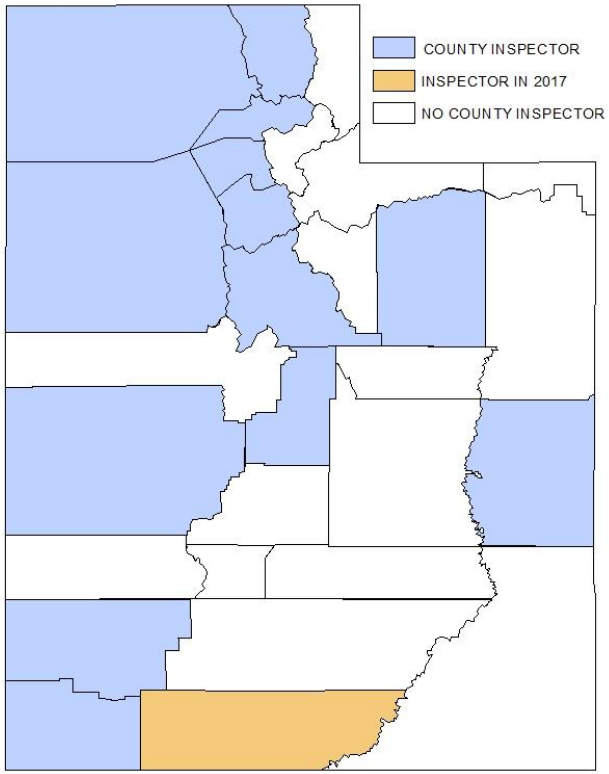
Giant honey bee (top)
European honey bee (middle)
Asiatic honey bee (below)
Photo by Ken Walker, Museum Victoria

APHIS Health Survey

Pathogen/Pest	Presence in survey
Israeli Acute Paralysis Virus	33%
Kashmir Bee Virus	21%
Deformed Wing Virus	79%
Acute Bee Paralysis Virus	4%
Chronic Bee Paralysis Virus	17%
Lake Sinai Virus-2	42%
Nosema spp.	54% (most below 1 million spb)
Slow Bee Paralysis Virus	Not detected
Apis cerana	Not detected
Tropilaelaps mite	Not detected
Small Hive Beetle	1 beetle detected

County Inspections

- 13 County Inspectors
- 1 New Inspector (Kane County)
- 163 inspections reported
- 3,631 hives
- No cases of AFB



Pollinator Protection

- Education of pesticide applicators
  - Utah State Horticulture Association
  - Utah Nursery and Landscape Association
  - CEU attendees
- Collaboration with NRCS and Extension to promote pollinator health
- Distributed hundreds of bee-friendly seed packets

Pollinator Protection

- Coming to IFA and other pesticide retailers in 2017

Honey Bee (*Apis mellifera*) | Hunt's Bumble Bee (*Bombus huntii*) | Alkali Bee (*Nomia melanderi*) | Blue Orchard Bee (*Osmia lignaria*)

Protect Utah's Pollinators

Pollination services provided by native and honey bees are responsible for 35% of agricultural production. Unfortunately, bee populations are often under tremendous pressure from diseases, habitat loss, pests and pesticide misuse. Pesticide applicators, growers and homeowners can take simple measures to reduce or eliminate bee exposure without reducing pesticide efficacy or increasing costs. Below are a few crucial best practices to protect bees.

Avoid applications to blooming plants

Check the "Environmental Hazards" section of the pesticide label. Pesticides that are toxic to bees and have extended residual toxicity (eight or more hours) should never be applied to plants in bloom. Insecticides, fungicides, herbicides and insect growth regulators should not be sprayed on blossoms if possible.

If plants in bloom must be sprayed, wait until evening

It is always preferable to avoid spraying plants in bloom; however, if the pesticide label permits applications on blooming plants, and an application must be made, wait until the evening when the bees have stopped foraging. Also, use the least hazardous pesticide option and formulation.

Don't allow pesticides to drift to non-target areas

During windy conditions the pesticide may be transported to non-target plants. Wait until winds have calmed before applying a pesticide. Great care should be taken when planting pesticide-treated seeds. Avoid seeding in dry soil conditions to prevent dust that may contain the pesticide from drifting onto flowering weeds or other plants.

This message brought to you by:

Utah Department of Agriculture and Food
Managed Pollinator Protection Plan(MP3)
UDAF

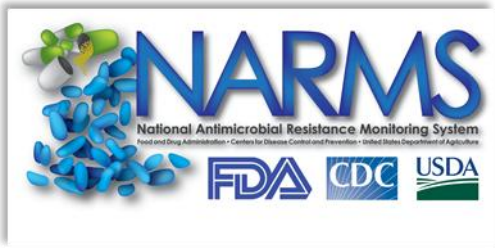
Always follow the pesticide label; it is the law!

For more information about protecting bees:
http://ag.utah.gov/plants-pests/beekeeping.html

Photo credits: (1) (2) Joseph Burger, Bugwood (3) (4) James Cane, USDA ARS

Why is the VFD being Implemented?

- The CDC estimates that annually, at least 2 million illnesses and 23,000 deaths are caused by antibiotic-resistant bacteria in the United States.
- 2015 Colistin resistance was discovered in China, worldwide spread of the resistance is a matter of time.
- Antibiotics have a limited lifespan – resistance will eventually develop.
- Once resistance develops it will take 500-1000 years for resistance to subside once we stop using the antibiotic.



Why is the VFD being Implemented?

- The horrors of the pre-antibiotic era have been forgotten.
- 10 Million deaths and $100 Trillion in lost GDP is expected globally by 2040-2050.
- Resistant bacteria will kill more in the US than cancer by the 2030s if aggressive steps are not taken.

What is included in a VFD order?

- Veterinarian's name, address and telephone number
- Client's name, address and telephone number
- Premise at which animals specified in the VFD are located
- Date of VFD issuance with an expiration date
- Name of the VFD drug(s)
- Species and production class of animals to be fed the VFD feed
- Approximate number of animals to be fed the VFD feed
- Indication for which the VFD is used
- Concentration of VFD drug in the feed and the duration of use
- Withdrawal time, special instructions and cautionary statements
- Number of reorders (refills) authorized, if permitted by the drug approval
- Addition of the statement "Use of feed containing this veterinary feed directive (VFD) drug in a manner other than as directed on the labeling (extra-label use), is not permitted".

- An affirmation of intent for combination VFD drugs
- The veterinarian's electronic or written signature

Extralabel Use in Minor Species

- Major species means cattle, horses, swine, chickens, turkeys, dogs, and cats. Minor species means animals, other than humans, that are not major species.
- Extralabel use means actual use or intended use of a drug in an animal in a manner that is not in accordance with the approved labeling.
- When there are no clinically effective treatment options available and the health of animals is threatened, and suffering or death would result from failure to treat the affected animals, extralabel use of medicated feeds may be considered for minor species.

Contact Information

Utah Apiary Program

350 North Redwood Road

Salt Lake City, Utah 84114

UDAF-Insects@utah.gov

(801)538-4912