

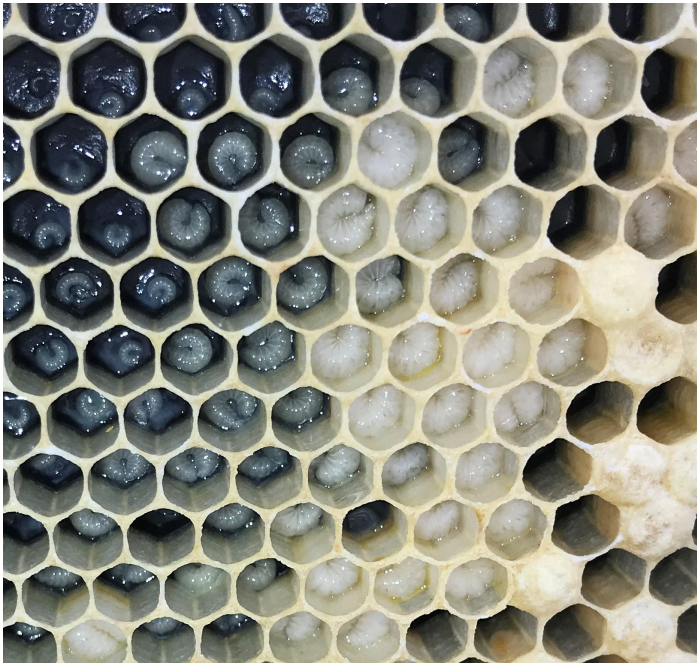


PennState Extension

Winter/Spring Threats to Honey Bees

Robyn Underwood

Recognize healthy bees



Healthy larvae, pearly white,
including their food



Healthy cappings, matte finish.
Healthy bees, normal wings



Eggs, one in each cell

Keep records!

	Brood			Queen					
Hive number	Eggs	Larvae	pped Bro	Q spotted	varroa in wash	disease	weight	emperame	Comments
101	x	x	x	blue	13	N	4	2	
102	x	x	x	green	4	N	4	2	
103	x	x	x	blue	9	N	1	2	
104	x	x	x	blue	6	N	4	4	
105	x	x	x	blue	1	N	3	2	
106	x	x	x	blue	8	N	2	2	
107	x	x	x	blue	17	N	4	3	
108	x	x	x	blue	3	Y	3	2	
109	x	x	x	green	22	N	4	2	
110	x	x	x	blue	3	N	4	2	
111	x	x	x	blue	13	N	4	4	
112	x	x	x	blue	8	N	4	2	
113	x	x	x	green	15	N	1	3	
114	x	x	x	blue	2	N	4	4	
115	x	x	x	blue	1	N	3	2	
116	x	x	x	blue	25	N	2	2	
117	x	x	x	blue	2	N	4	3	
118	x	x	x	green	5	Y	2	1	
119	x	x	x	blue	17	N	4	1	
120	x	x	x	blue	6	N	4	2	



Nosema

Microsporidian *Vairimorpha apis* and *V. ceranae*

Signs: May (or may not) cause dysentery, slow spring buildup, shortened lifespan

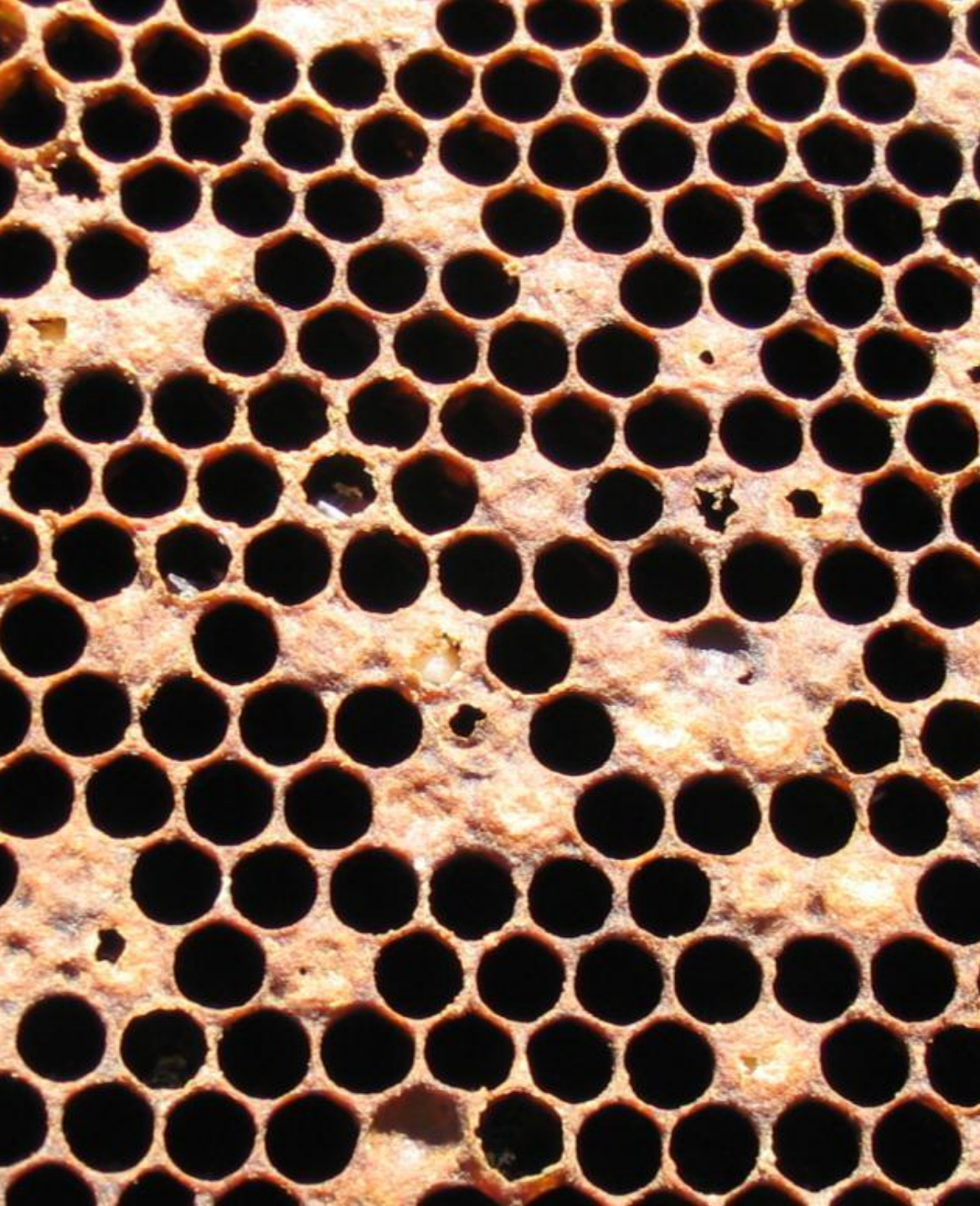
Prevent: Fumagillin in fall feed

Chalkbrood

Fungus, *Ascosphaera apis*

- **Signs:** larvae look like chalk, mummies on bottomboard
- **Damage to bees:** Kills brood after capping, workers remove mummies
- **Prevention:** Don't chill brood





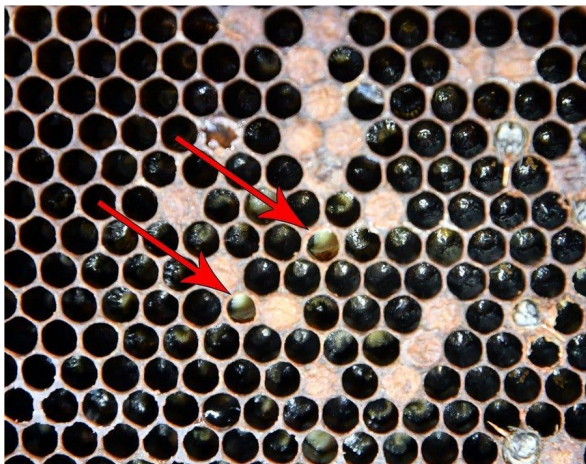
American Foulbrood (AFB)

Bacterium, *Bacillus larvae*

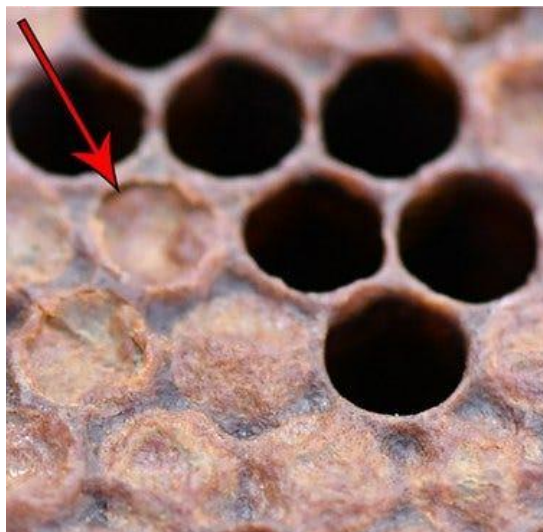
Damage to bees:

- Fatal after capping
 - larva or early pupa
- Leads to colony death
- No cure
- **Highly** contagious
 - spores ingested by larvae <53 h old

AFB symptoms



**Poor brood pattern,
sunken larvae**



Sunken cappings



Perforated cappings



Ropey test

See <https://extension.psu.edu/honey-bee-diseases-american-foulbrood>

Field Test



PA Inspectors



Call your inspector!

Holst Milk Test

Holst Milk Test



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European Foulbrood (EFB)

Bacterium, *Melissococcus pluton*

Damage to bees:

- Fatal for *larvae* (before capping)
 - 2-4 days old
- Impacts population growth



European Foulbrood (EFB)

Bacterium, *Melissococcus pluton*

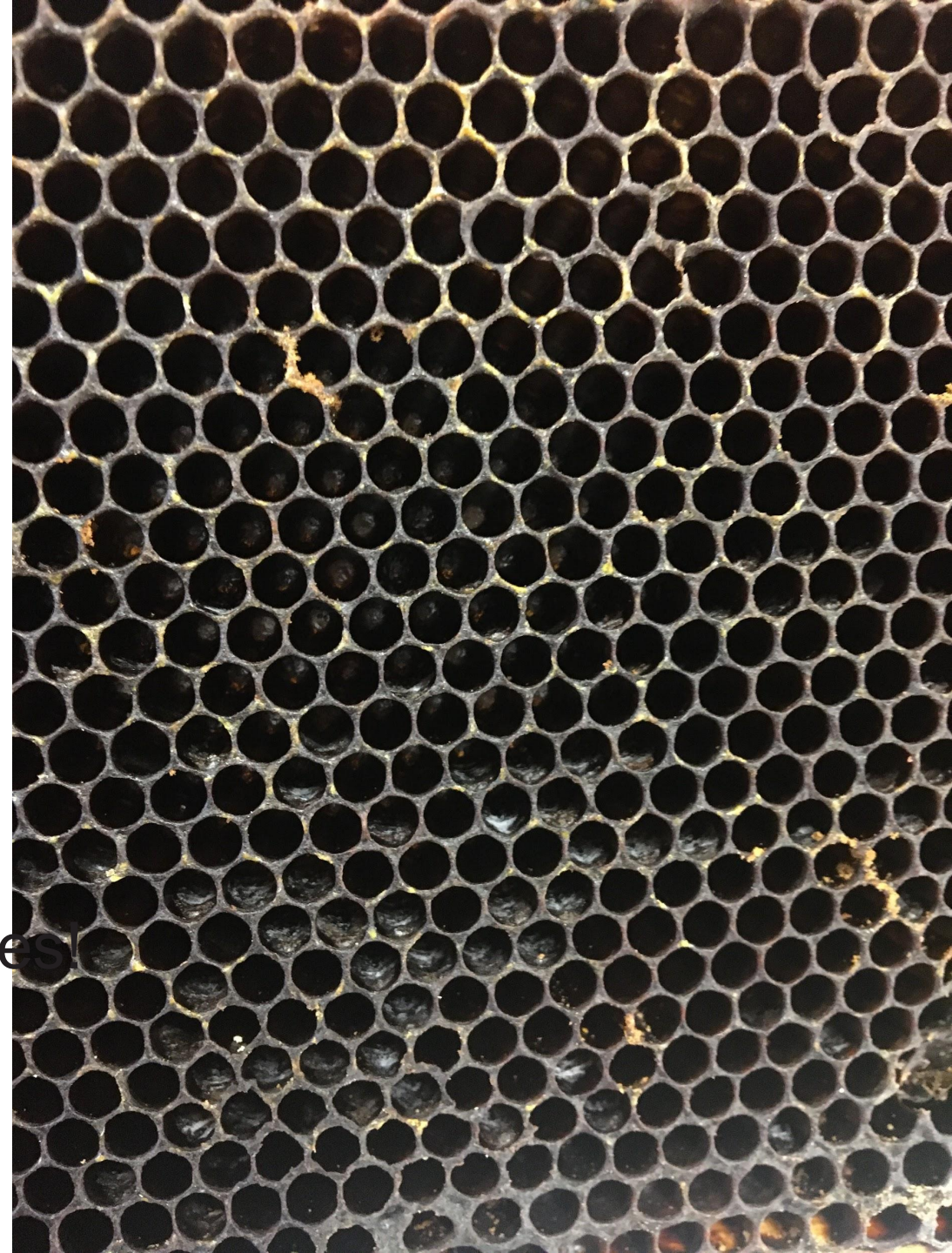
Signs:

- Discolored, twisted larvae
- Spotty brood pattern
- Food and larvae not pearly white
- Rubbery, removable scales
- NOT ropey
- Call your inspector

AFB/EFB Prevention

- Do not buy used equipment
 - Ask for inspection records
 - Look scales
 - Buy new frames

Each AFB scale contains 100 million spores!



AFB/EFB Prevention



- Do not feed bees honey from an unknown source
- Avoid robbing and open feeding
- Make sure you and your neighbors are registered!

AFB/EFB Prevention

- Sterilize hive tools!

1. Scrape it clean
2. Sterilize it with heat or diluted bleach



AFB vs EFB

- **AFB**

- spore-forming bacteria
- killed after capping
- scale hard & stuck
- ropey +



- **EFB**

- non-spore-forming bacteria
- killed before capping
- scale rubbery & removable
- ropey -





Wax Moths

Moths *Galleria mellonella* or *Achroia grisella*

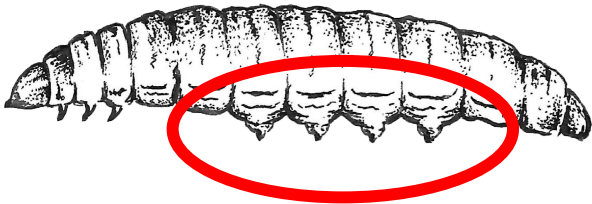
Signs: Webbing on comb, pupae present on wood, frass on bottom board

Damage: Ruin unattended comb

Prevent: Extract within 3 days of removal, freeze equipment, paramoth crystals, Certan

Wax Moth Larvae

- Have prolegs
- Make web trail
- No slime



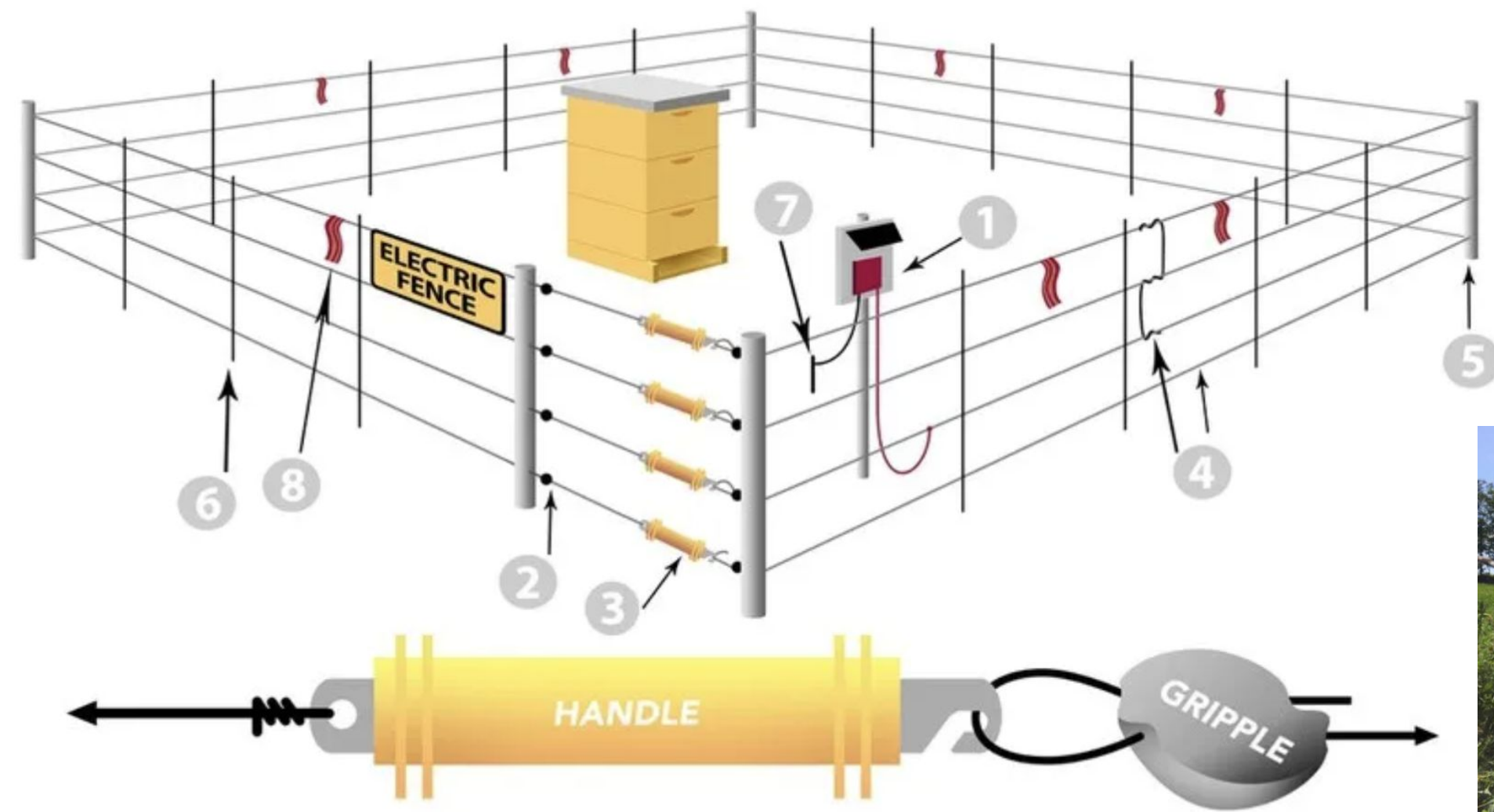


Bears

Black bear, *Ursus americanus*

Tear apart equipment

Can be fatal to colony



Don't forget the bacon!



Bear Fence

See <https://extension.psu.edu/hive-protection-bear-fence-design>

Connect with Penn State Extension for
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extension.psu.edu/signup



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