Commercial Beekeeping
&
Russian Bees

Steven Coy
Coy Bee Company
www.coybeecompany.com

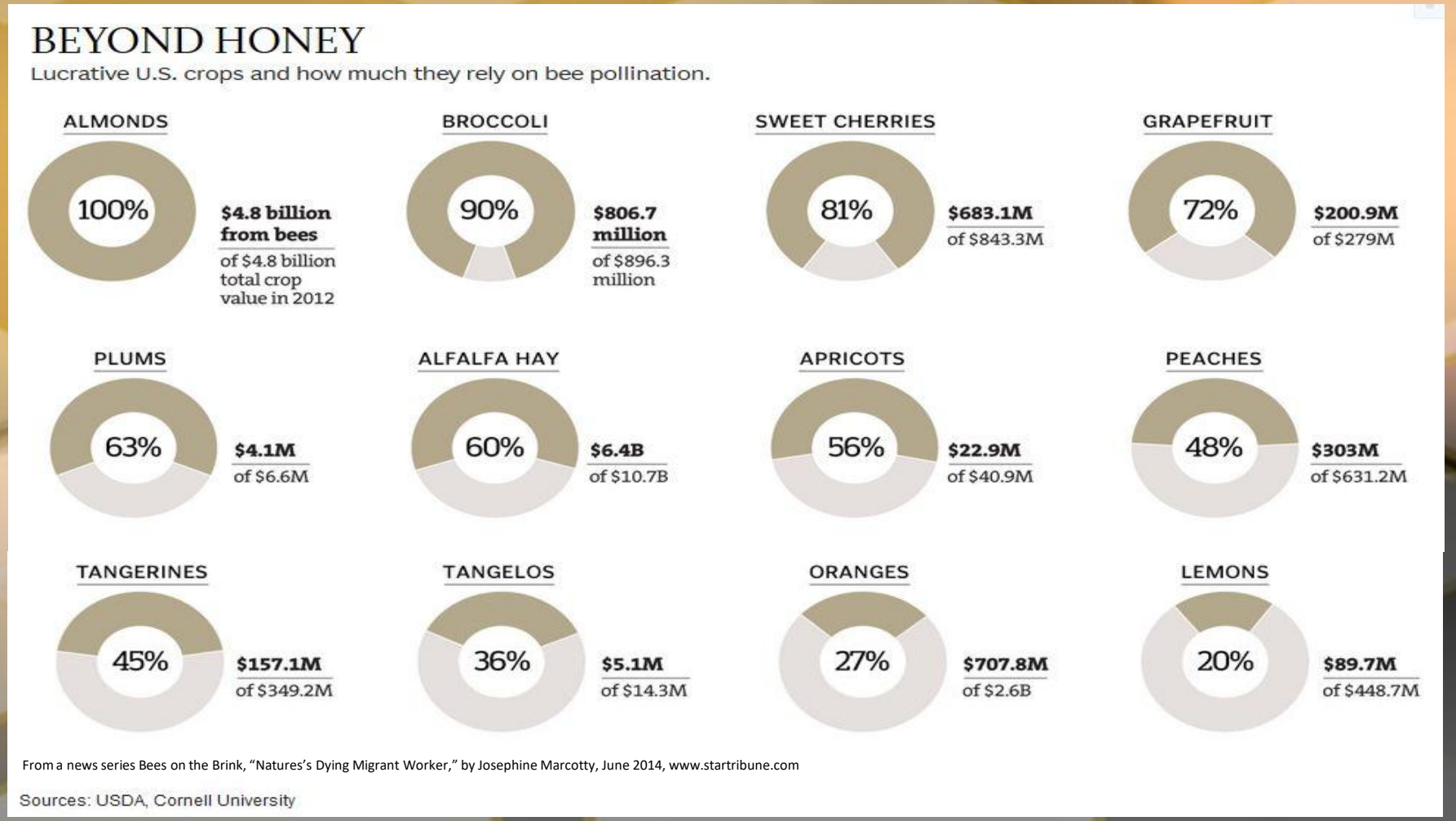
Commercial beekeeping has changed

Almond Pollination derives Commercial Beekeeping in the US

Commercial Beekeeping takes advantage of the landscape and agriculture production

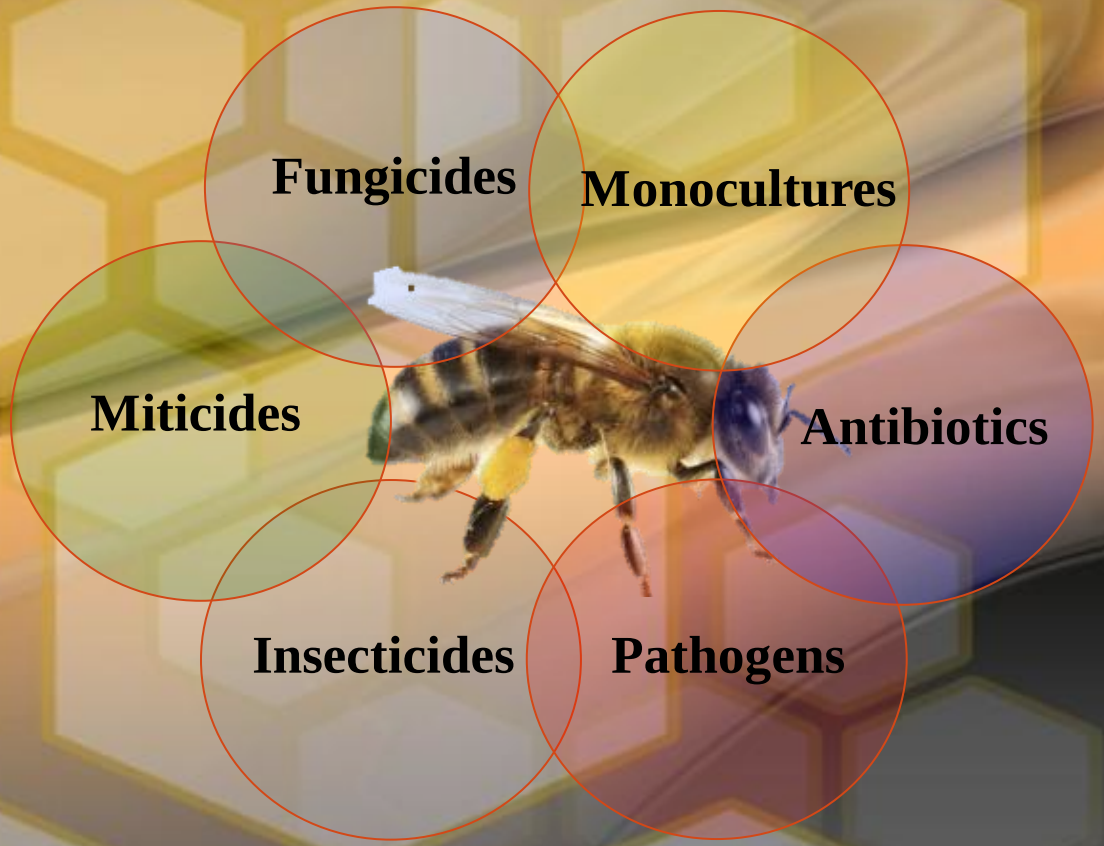
Fewer but larger beekeeping operations now

The value of pollination is greater than the value of honey production

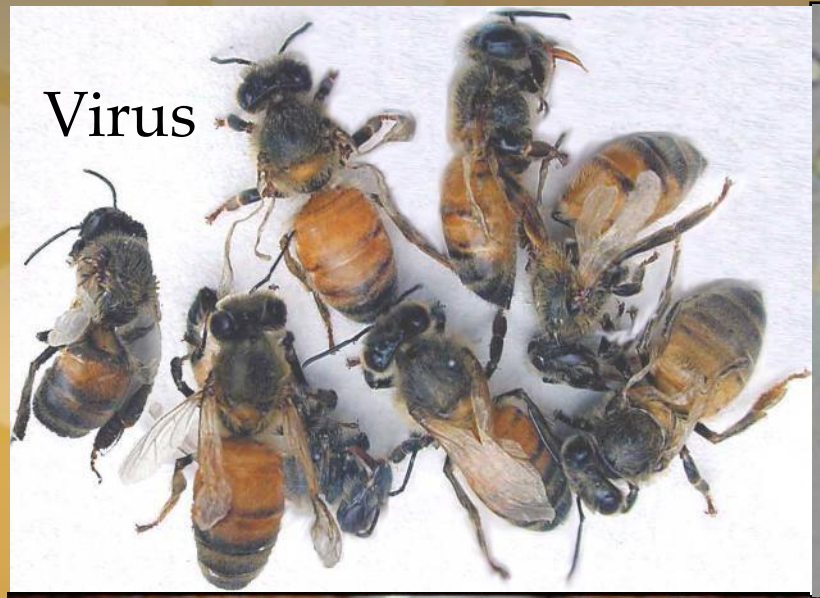


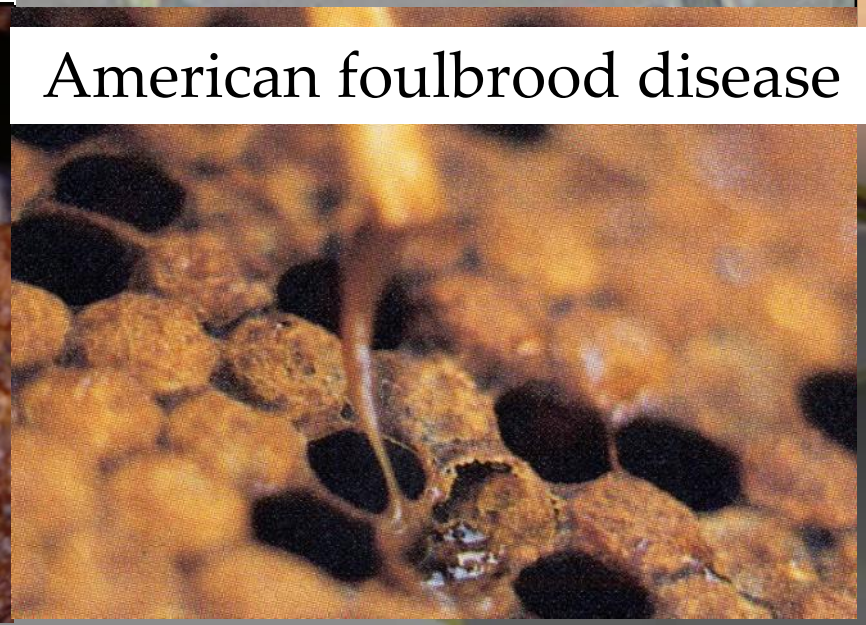
From a news series Bees on the Brink, "Natures's Dying Migrant Worker," by Josephine Marcotty, June 2014, www.startribune.com

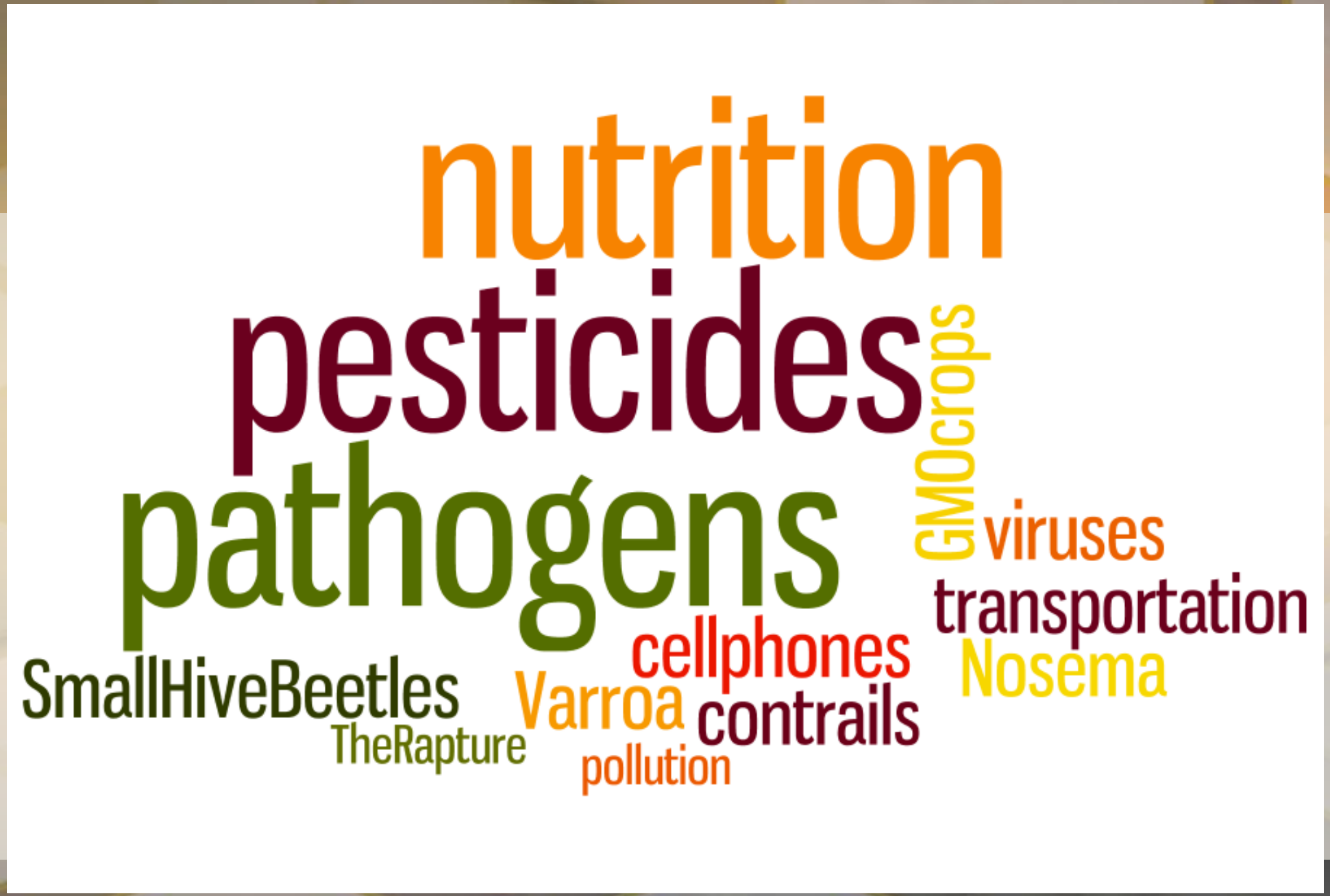
Honey bees are affected by many stressors.



Honey Bee Diseases and Pests






nutrition
pesticides
pathogens
GMOcrops
viruses
transportation
Nosema
cellphones
contrails
Varroa
SmallHiveBeetles
TheRapture
pollution

Russian Honey Bees are **NOT** the perfect bee

Russian Bees ARE resistant to mites

Annals of the Entomological Society of America

Growth of *Varroa destructor* (Acari: Varroidae) Populations in Russian Honey Bee (Hymenoptera: Apidae) Colonies

LILIA I. DE GUZMAN,[1] THOMAS E. RINDERER, AND AMANDA M. FRAKE

JOURNAL OF ECONOMIC ENTOMOLOGY

Associations of Parameters Related to the Fall of *Varroa destructor* (Mesostigmata: Varroidae) in Russian and Italian Honey Bee (Hymenoptera: Apidae) Colonies

THOMAS E. RINDERER,[1] LILIA I. DE GUZMAN, AND AMANDA M. FRAKE

JOURNAL OF ECONOMIC ENTOMOLOGY

An Evaluation of the Associations of Parameters Related to the Fall of *Varroa destructor* (Acari: Varroidae) From Commercial Honey Bee (Hymenoptera: Apidae) Colonies as Tools for Selective Breeding for Mite Resistance

THOMAS E. RINDERER,[1,2] LILIA I. DE GUZMAN,[2] AMANDA M. FRAKE,[2] MATTHEW R. TARVER,[2] AND KITIPHONG KHONGPHINITBUNJONG[3]

Journal of Apicultural Research

Brood removal influences fall of *Varroa destructor* in honey bee colonies

Lilia I. de Guzman[a]*, Thomas E. Rinderer[a], Amanda M. Frake[a] and Maria J. Kirrane[b]

JOURNAL OF ECONOMIC ENTOMOLOGY

Asynchronous Development of Honey Bee Host and *Varroa destructor* (Mesostigmata: Varroidae) Influences Reproductive Potential of Mites

MARIA J. KIRRANE,[1,2,3] LILIA I. DE GUZMAN,[4] THOMAS E. RINDERER,[4] AMANDA M. FRAKE,[4] JEREMY WAGNITZ,[4] AND PÁDRAIG M. WHELAN[1,2]

PLOS ONE

Phenotypic and Genetic Analyses of the *Varroa* Sensitive Hygienic Trait in Russian Honey Bee (Hymenoptera: Apidae) Colonies

Maria J. Kirrane[1,2]*, Lilia I. de Guzman[3], Beth Holloway[4], Amanda M. Frake[3], Thomas E. Rinderer[3], Pádraig M. Whelan[1,2]

Journal of Insect Behavior

Evaluations of the removal of *Varroa destructor* in Russian honey bee colonies that display different levels of *Varroa* sensitive hygienic activities

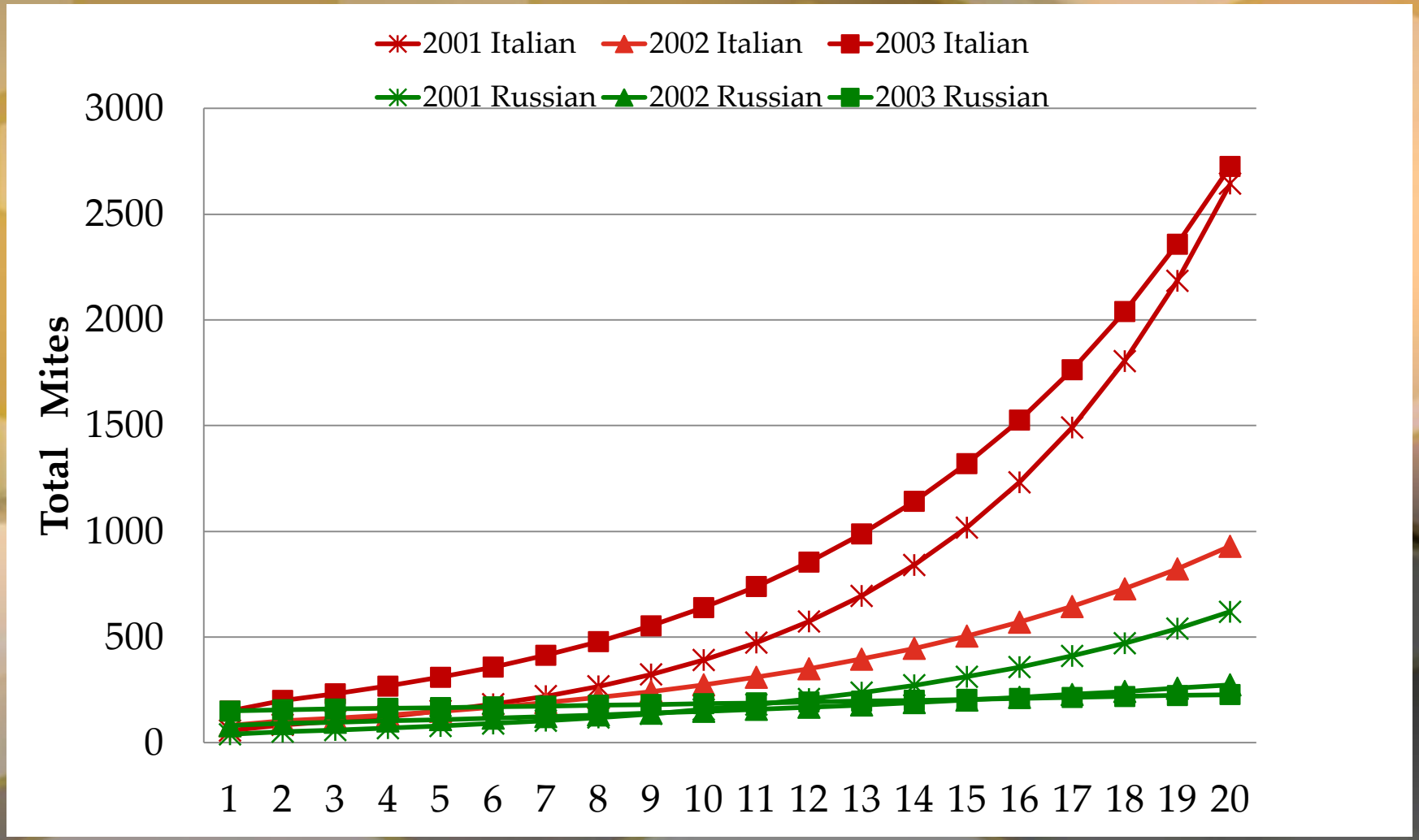
Maria J. Kirrane[1,2], Lilia I. de Guzman[3], Amanda M. Frake[3], Thomas E. Rinderer[3], Pádraig M. Whelan[1,2]

Mechanisms of Resistance to Varroa Mites by Russian Honey Bees

- **Low proportions of brood infested**
- **Extended phoretic period of *Varroa* mites**
- **A strong expression of hygiene**
- **Higher proportion of damaged mites**
- **Fewer multiply in infested cells in both worker and drone brood**
- **Higher proportion of non-reproductive mites**
- **Decreased number of progeny and number of viable female offspring**
- **Combs built by RHB contribute to decreased reproductive success**

Weekly Growth rate of Varroa Mites in Russian and Italian Colonies

DE GUZMAN ET AL.: *V. destructor POPULATIONS IN RUSSIAN HONEY BEE COLONIES (2007)*



There is more to successful beekeeping than controlling mites

- Good Weather
- Good Locations
- Good Bees
- Good Beekeeper
- Good Business

Sometimes Simple is very effective

Will you have to treat for mites?

Maybe

- I currently use Apivar in the spring
- ½ thymol gel treatment when I pull honey in June
- 1 full treatment in October
- CHF after almonds hives get ½ treatment in spring, ½ treatment in summer after 1st crop, 1 treatment in fall.
- We DO NOT treat for Nosema or foul brood

Carl Webb

- 400 colonies in Georgia
- Producer of the Worlds Best Honey Apimondia 2005,2009
- Bought his first Russian breeder queen in 2000 and by 2002 all colonies were Russian bees.
- In 2004 and 2005 discontinued using synthetic mite treatments and treated with Apilife Var or Apiguard once each year.
- In 2006 this was discontinued treatment, no mite treatment for the past four years.
- He has not treated colonies for foulbrood since 2002.
  He has had 2 hives suffer from infection of AFB since 2000.
- Some colonies showed high levels of nosema this fall. Therefore all colonies were treated with one gallon of Fumagilian sugar syrup mix each.

Charlie Harper retired from RHBA in 2014

- 400 colonies in Louisiana
- No treatments for mites since 2004.
- Before Russians he used TM every spring and still found foulbrood.
- Now foulbrood is very rare.
- Winter loss is about 5%.

Started as 4 frame nucs in April
Picture taken at end of June

Bob Brachmann

- 300 colonies in New York.
- Last treatment for varroa mites was in the winter of 2005 or 2006, with an organic acid.
- Typically expects to loose 7%- 8% through the winter.
- Doesn't use fumigillin or any antibiotics.
- Hasn't seen one cell with AFB in at least 8 years.

How CHF switched to Russians

- Bought Breeder Queens from USDA CRADA holder from 2000- 2007
- Made splits with queen cells
- First year colonies were hybrids
- Next few years we split from previous years hives
  - Due to Boll Weevil Eradication we couldn't maintain enough hives
- Started splitting from "old" hives and gained 2500 Russian hives each year
- After 5 years of Russian queen cells went back to splitting 1 year old hives.
- Increased to 12,000 Russian hives

How I acquired all Russian bees

Year 1

- Bought 300 Italian singles
- Made 200 new colonies with queen cells
- Mated them in Russian yards
- Requeened 50 colonies
- Most of the Italian colonies died

Year 2

- Made all new colonies with Russian cells
- Split 180 into 575

How can you switch to Russians?

- Buy Queens from a Certified member for your colonies
- Buy Queens and select the best as your breeders
- Buy Queen Cells
- Buy Nucs
- The association rotates blocks each year to prevent inbreeding

Coy's Honey Farm

- I left in 2014
- 12,000 colonies
- Honey Production
- Pollinate Almonds
- Arkansas, Missouri, Mississippi
- Largest all Russian operation in U.S.

Split/Nuc yard

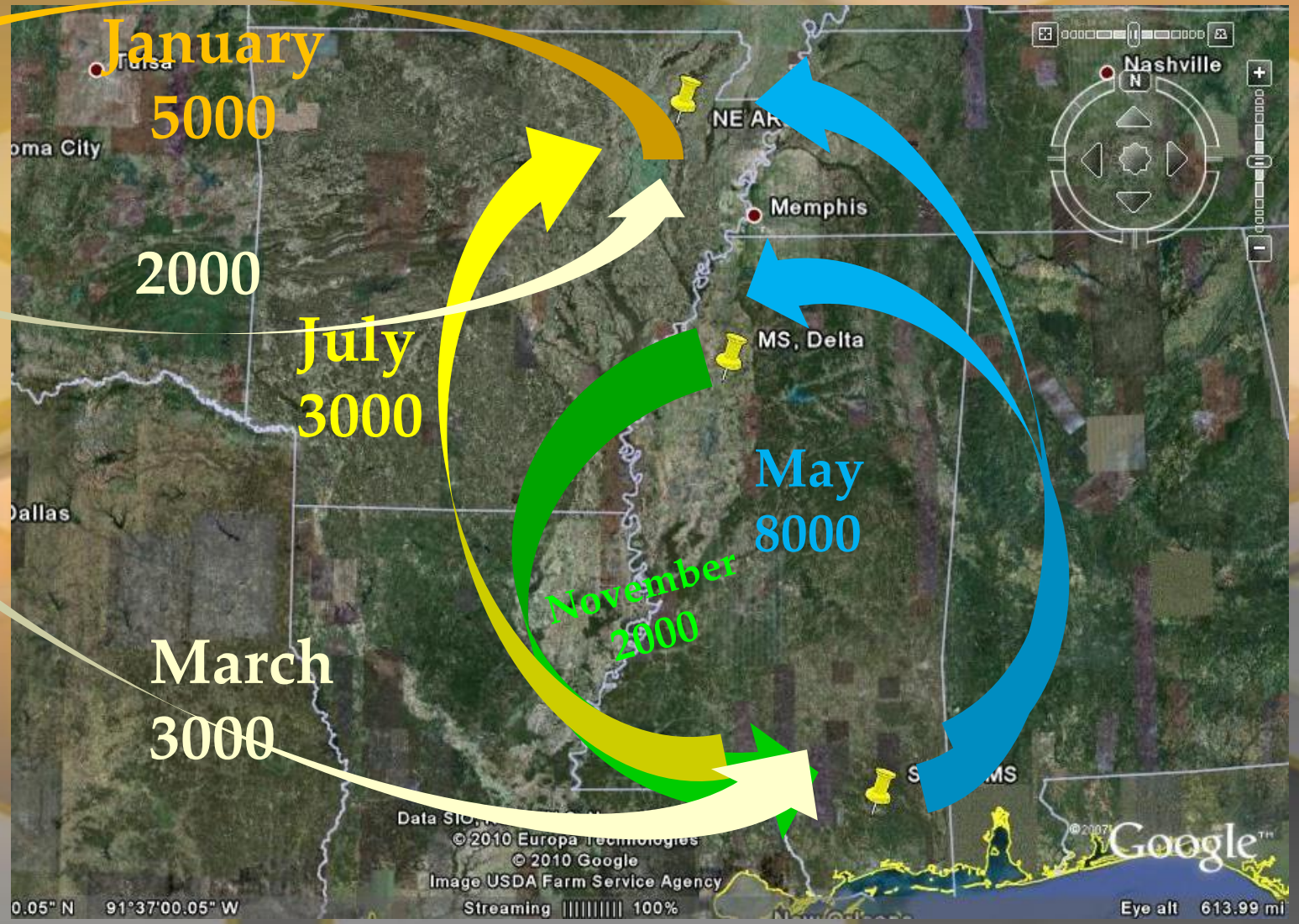
5,000 – 7,000
new hives each year

Honey pulling crew

- 2 trucks
- 7-9 men
- 28-32 pallets/day

Coy's Honey Farm's Annual Migration 2014

Average production 100lbs /hive



Size distribution of Russian bees for Almond pollination with feeding

Treatment	Avg. size	Colonies > 6 frames		Colonies > 8 frames	
		Percentage	Size	Percentage	Size
Fed Minimally	5.8	45	9	27	10.1
Fed Continuously	8.6	74	10.2	59	11.1

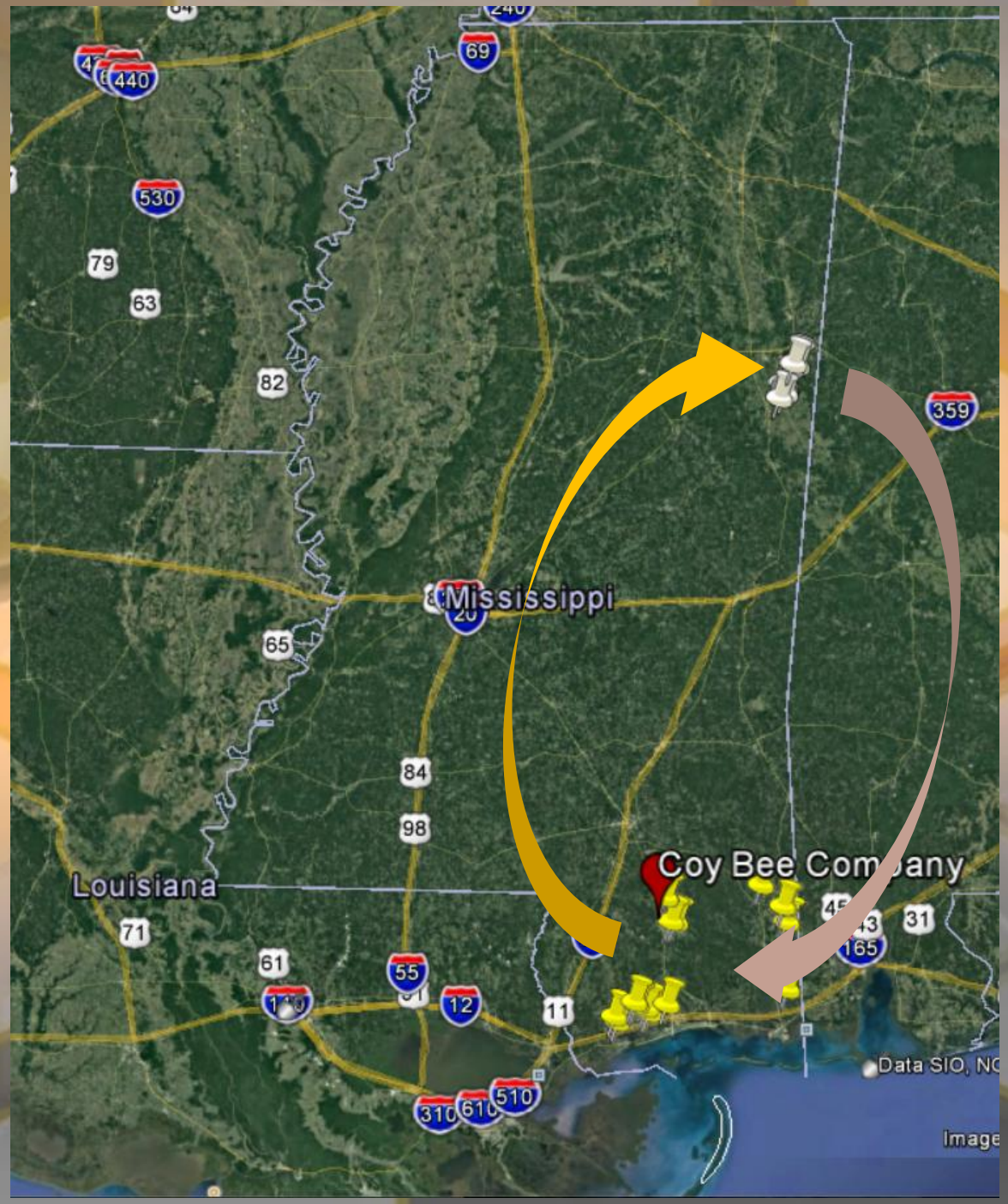
Good locations make good beekeepers

Coy Bee Company

- Started in 2014
- 500 colonies
- 1200 mating nucs
- Sell Russian Queens and Nucs
- Honey Production
- Stay in Mississippi

Coy Bee Company Mini-migration

- Make splits in March place on Spring locations
- Harvest honey in middle of June
- Move bee 200 miles North to Cotton/Soybeans
- Harvest honey in early September
- Move bees South in October

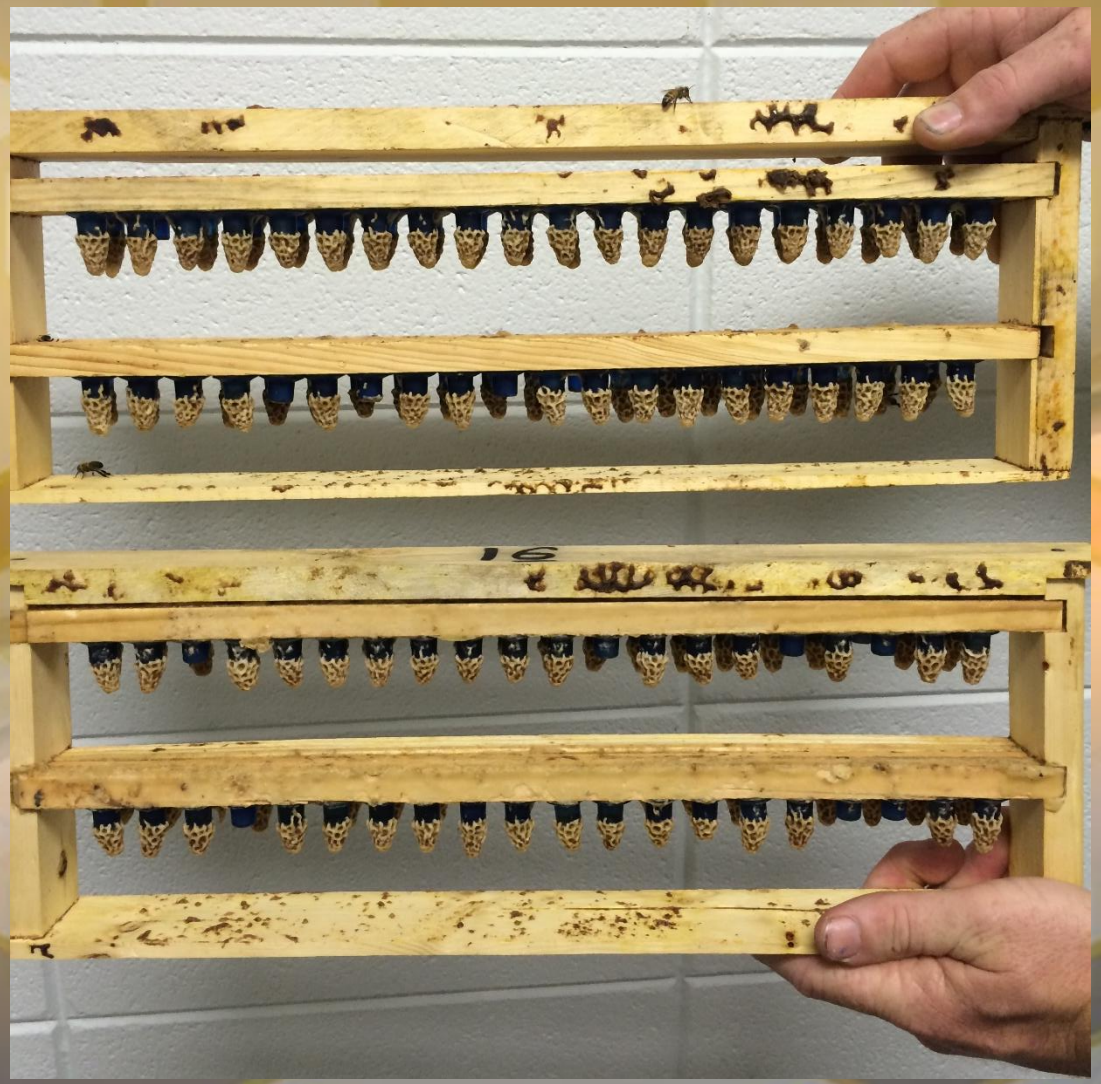


Honey Stand and shop

Stocking queen nucs

Finished and placed Qnucs

Producing queens



5-Fame nucs

CBC locations

CBC honey crew

Extracting room

250 boxes/day

How to mix sugar water

- Mix what you will use within 5 days
- Add essential oils
- Store in tall dark tank
  - Reduced surface area and light retards algae and bacteria growth
- Feeder types
  - Inside feeders
  - Top feeders
  - Entrance feeders
  - Bucket feeders
  - Community feeders

Late means short

- Late start of spring feeding will delay splitting date
  - figure a minimum of 25 days to dramatically increase population
- Later the splits the less time there is to make honey
  - You can't make all you splits in one day (or one week)
  - It takes 40-60 days to reach peak population
- Late start date of bloom means short bloom season
  - If spring is 10 days late you just missed 5-10 days of bloom
  - Summer will still arrive on time
    - if not it would eventually be summer in December

Beekeeping can be painful but……

Things usually have a way of working out.

Only in Louisiana

Questions ?

Thank You!

Steven Coy
Coy Bee Company