Kerr Center for Sustainable Agriculture E-Newsletter

E-Field Notes
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It's October, when spooky decorations are everywhere you look. In keeping with the season, in this issue we're talking about some of the **scariest things in agriculture**.

David Redhage starts us off with a tough question: Which is the more frightening - a **deadly plague**, or a **new genetic engineering technique that could potentially result in the extinction of entire species**?

The rest of this month's newsletter focuses on another chilling topic: the **misuse of synthetic pesticides**.

Oftentimes, efforts to reduce pesticide use stem from a desire to protect non-target plants and animals. It's important, though, to remember to **protect the people who work on farms and ranches from pesticide exposure** as well.

Neonics are some of the most widely used pesticides today, catching much of the blame for bees' current plight. New research suggests that **neonics not only poison bees, but are actually addictive to them** - yet the chemicals are **used far more than necessary**.

One technique we've tried for reducing pesticide use on the Kerr Ranch is **using goats instead of sprays to control brush**.

Whatever spooks you this season, please don't be afraid to **donate** to support our work. **Thank you!**

President's Note: Concerns about a New Technology and Sustainable Agriculture

Most sustainable agriculture practitioners do not like GMO crops. The reasons given are numerous. Mixing plant and animal genetics, ownership and patenting of plants, and who controls the genetics, are just a few.

Image credit: CDC Public Health Image Library (#5814)

CRISPR (Clustered Regularly Interspaced Short Palindromic Repeats) technology is a new type of genetic engineering. It is different than current GMO techniques, but rather than explain it I have included some web links (see list below).

The Wikipedia article is very scientific, but does explain the technique. The TED talk tries to strike a balance between the pros and cons of using this technology, but in the end seems to conclude that we need to try it, giving malaria as the main reason.

The reason I am writing about it is due to the MIT Technology Review article ("The Extinction Invention"). The CRISPR method concerns me due to how it can potentially be used. The article is about using CRISPR to help eliminate a species of mosquito that spreads malaria.

I am all for eliminating a deadly disease, but question the concept of using technology to cause an entire species to become extinct. Can the gene trait which would make a mosquito species extinct jump to another species of mosquito? We cannot say with absolute certainty that it can't happen – so if it does, you have a potential cascade of extinctions.

Some scientists feel that this will not work, that some mosquitos will prove resistant to the genetic modification. The technology has already been used to make mosquitos resistant to carrying the malaria virus. Doesn't this seem better than making the mosquito species extinct?

In all fairness, a different technique – but with similar results – was used to control screwworm flies in the United States and Central America using releases of sterile males. This eliminated the screwworm from the United States by 1966.

I don't know of any documented negative effects from the elimination of the screwworm from North America. However, there is one major difference. Releasing sterile male flies doesn't result in a trait that can be passed from one generation to the next.

The CRISPR technology debate shows how we only tend to think about the potential good from a new technology, but ignore the potential negative ramifications. As with most technologies, this one has both potential good and bad uses. CRISPR is said to be powerful due to its ease of use and much more predictable results than other GMO techniques.

Continue reading....

Report: Reducing Pesticide Exposure

Synthetic pesticides have gained notoriety for the problems they cause for many non-target organisms - ranging from monarch butterflies to milkweed, and honeybees to house wrens. Sometimes overlooked, though, can be **pesticides' inadvertent harm to** another very important group of organisms: the **people who work on farms**.

A **new report from the Organic Center** takes a detailed look at pesticides and their effects on farmers and farmworkers.

Organic Agriculture: Reducing occupational pesticide exposure in farmers and farmworkers synthesizes more than **120 studies** on the **health impacts on farmers and farmworkers** of work-related **exposure to pesticides**. It also explores how **organic farming methods**, including USDA organic regulations, directly benefit these individuals.

"The health and safety of those who produce our food should be a top concern for all of us, and consumers can take action to support healthy farming communities by choosing food grown organically," the report says.

"By shifting to more sustainable food production systems that rely on balanced ecosystems as a first line of defense against pests, we can ensure sustainable food security and healthy agricultural communities into the future."

The **report is available free** from the Organic Center's website.

The Kerr Center's online **horticulture library** has a section devoted to **sustainable pest management**.

Neonics: Addictive - and Overused

Neonicotinoid pesticides, or neonics, rank high among the many threats facing bees - so high that the European Union has banned three of the most widely used ones outright. Now, though, it turns out that **these chemicals may be hooking the bees as well as hurting them**.

Most studies of neonics' impacts on bees simply feed the bees a diet of sugar water spiked with the pesticide. Recently, though, researchers from Imperial College London tried a different technique: offering bees a choice between sugar solutions with and without the added pesticide.

The **study** was meant to determine whether bees could recognize and avoid neonic contamination, and initial results indicated that they could, and did. Over time, though, the **bees actually began to visit the pesticide-laced feeders more often than the unadulterated ones** - even when the researchers switched up the locations of the feeders.

Rather than recognizing and avoiding the toxic pesticide, the bees were actually seeking it out.

Neonicotinoid sounds like "nicotine," and the molecules also resemble each other's chemical structure. Now it appears that **neonic-contaminated nectar is habit-forming for bees in a way similar to how nicotine makes it hard for humans to quit smoking**.

If there's a silver lining around the cloud neonics have thrown over honeybees, it's been revealed by other recent **research**, showing that **much of the time, neonics simply aren't needed**.

Continue reading....

Brush Control with Goats

Over the years, the Kerr Center has mounted several projects aimed at **reducing use of herbicides in brush control** efforts on the ranch.

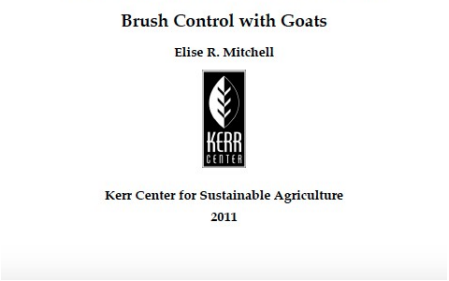
One such undertaking fenced off an entire section of the ranch for a major investigation into **using goats for brush control**.

The project ran for five years, keeping extensive records throughout.

The resulting report, ***Brush Control with Goats***, covers fencing, facilities, breeds, stocking rate, animal management, and predators, along with complete information on the project outcomes.

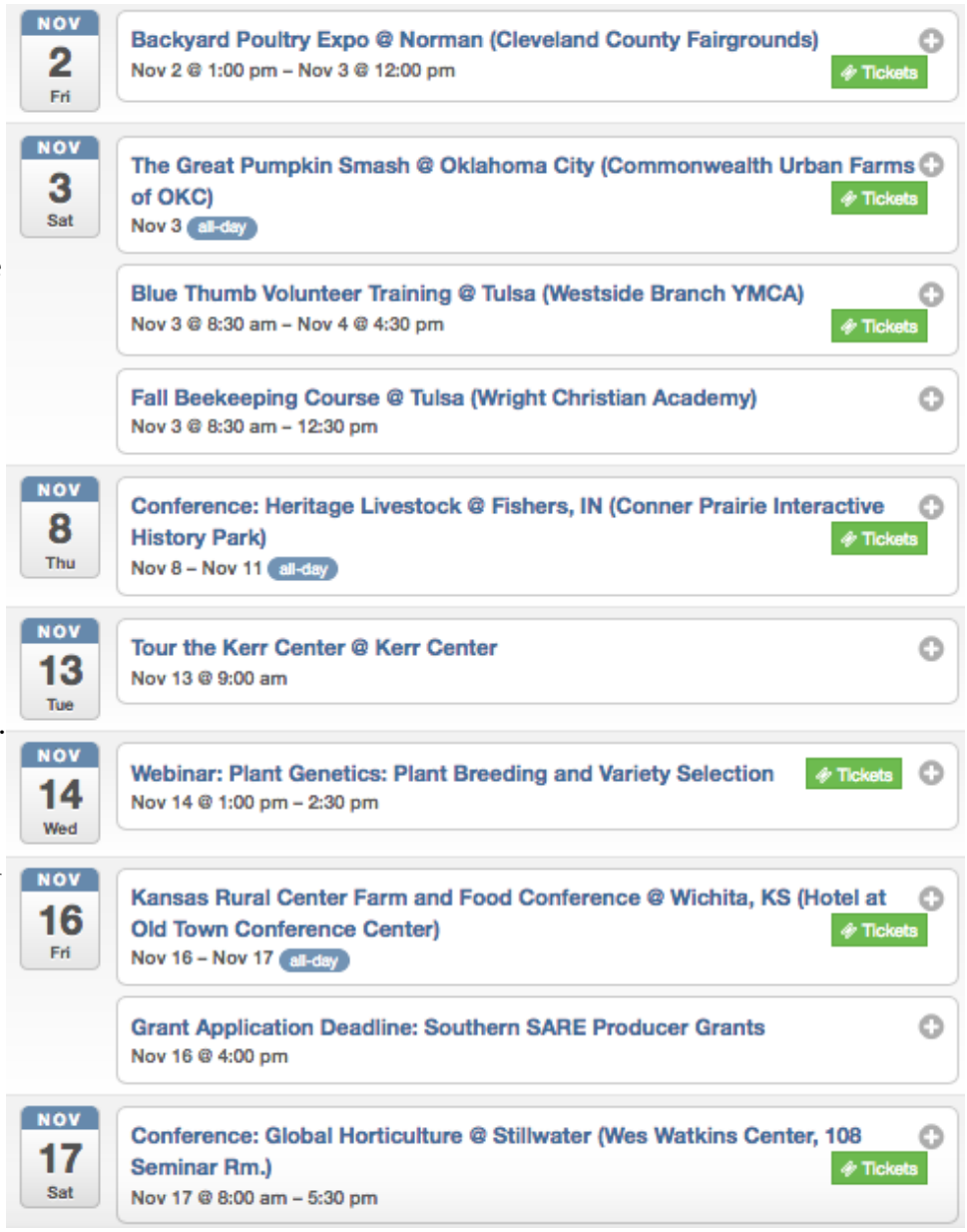
Brush Control with Goats is available as a free download from the Kerr Center's online **livestock library**.

Read publication....



Fall Events: Backyard Poultry, Farm & Food Conference, SARE Producer Grants...

November is filled with learning opportunities in sustainable agriculture. There's a **backyard poultry** conference (Nov. 2, Norman), the **Kansas Rural Center's annual conference** just across the state line (Nov. 16-17, Wichita, KS), and OSU's **global horticulture** conference (Nov. 17, Stillwater). Also, don't forget the **deadline for Southern SARE producer grant applications** on Nov. 16.



All this is only scratching the surface - and only for the first half of the month. You can find full details on these and many other upcoming sustainable agriculture events around the state and region on the Kerr Center's online [events calendar](#).

The calendar also serves as a reminder for the dates of **monthly Kerr Center** [tours](#), which run all year round, every second Tuesday by appointment.

Don't forget that you can also use our online calendar to **keep yourself and your friends up to date** on these and other upcoming events, including our tours:
- **Subscribe to our feed** and receive **updates to your personal calendar** (Outlook, Google+, etc.) as they are made.
- **Share events on the calendar** via a number of **different social media sites**, including Facebook, Twitter, and Pinterest.

Support the Kerr Center

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