DIDEEBYCHA

GMCA Newsletter

Getting Ready for Mosquito Season

Mosquito control programs prepare for mosquito season by focusing on finding and eliminating/controlling breeding sites, controlling mosquito populations at both larval and adult stages, and educating the public about mosquito control measures. This involves removing standing water, doing larval and adult mosquito surveillance, larviciding and adulticiding appropriately, and promoting public awareness about safe mosquito-avoidance practices.

1. Prevention of Breeding Sites:

Remove standing water:
Mosquitoes lay eggs in standing water, so eliminating these breeding grounds is crucial. This includes emptying birdbaths, changing pet water bowls regularly, and disposing of items that can hold water, like tires and buckets.

Maintain public spaces:
Cleaning up parks, greenways, and other public areas helps prevent mosquito breeding by removing potential water sources.

Educate the public:
Public awareness campaigns can encourage individuals to take steps to eliminate mosquito breeding sites in their own yards and neighborhoods.

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Inside This Issue

(Excerpts From) The Intersection of Mosquito Management and Pollinator Protection

By Elmer W. Gray and Jennifer Berry

Mosquitoes can transmit a wide variety of pathogens and significantly reduce our quality of life with their aggressive biting behavior. Pollinators, and honeybees in particular, are a critical part of our natural environment, contributing significantly to food production and ecological diversity. Unfortunately, these two groups of insects often have overlapping habitats. As a result, proponents of both mosquito management and pollinator protection must find a way to communicate effectively and work together for the betterment of both society and these important entities.

Mosquitoes pose a significant public health risk due to their disease transmission potential. That being said, pollinators are extremely important and seemingly at risk. Pollination is necessary for the production of seeds and fruits in many crops, and bees outperform them all because of their dietary need for pollen and nectar, their hairy bodies that carry pollen grains easily, and their rapid flight from flower to flower.

Honeybees, along with other pollinators, are susceptible to pesticides, and significant bee kills have occurred due to mistimed or misguided pesticide applications. These types of events should not occur, and all parties involved must work in a more thoughtful and diligent manner to ensure that they don't. However, in today's society and economy, pesticide applications are conducted in many parts of our environment by a wide range of individuals with varying levels of training and expertise. Commercial pesticide applicators involved in mosquito control activities are required by law to possess a pesticide applicator's license, which typically includes pollinator protection training and education. In addition, all pesticide applications are regulated by the pesticide label, which now include pollinator awareness specifications. The training and

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2. Larval and Adult Surveillance

Larval Surveillance:
Routine larval surveillance provides a more complete and accurate record of sources of mosquito breeding, thereby providing documentation of mosquito production as a basis for treatment.
Ongoing larval surveillance allows for continuous evaluation of insecticide application and control results.
A clear understanding of species distribution, density and seasonal occurrence is facilitated through routine larval surveillance.
Routine larval surveillance enhances the knowledge provided by adult mosquito surveillance.

Adult Surveillance:
Adult mosquito surveillance involves monitoring and understanding adult mosquito populations to guide control efforts and assess disease risks. This includes trapping mosquitoes, identifying species, and analyzing data to determine the severity of outbreaks and appropriate management strategies.

Trapping:
Used to collect adult mosquitoes. Include CDC light traps, BG-Sentinel traps, Gravid traps.

Landing Counts:
These involve counting mosquitoes that land on and attempt to bite a person in a specific area.

Resting Boxes:
These simulate the resting environments of certain mosquito species, like tree holes, to capture them.

Surveillance helps determine the size, distribution, and species composition of adult mosquito populations. By identifying mosquito species and their prevalence, surveillance helps assess the risk of mosquito-borne diseases. Surveillance data informs decisions about the best control methods, such as larvicide applications or adulticide spraying.

3. Larval and Adult Control:

Larvicides:
These pesticides kill mosquito larvae before they develop into adults. They are applied to standing water sources to prevent mosquito populations from increasing.

Adulticides:
These pesticides kill adult mosquitoes. They can be applied through various methods, including aerial spraying or ground-based spraying.

Integrated Mosquito Management (IMM):
This approach combines surveillance, various control methods for both larval and adult control, as well as source reduction and education, to achieve the most effective and sustainable mosquito management.

3. Public Awareness and Education:

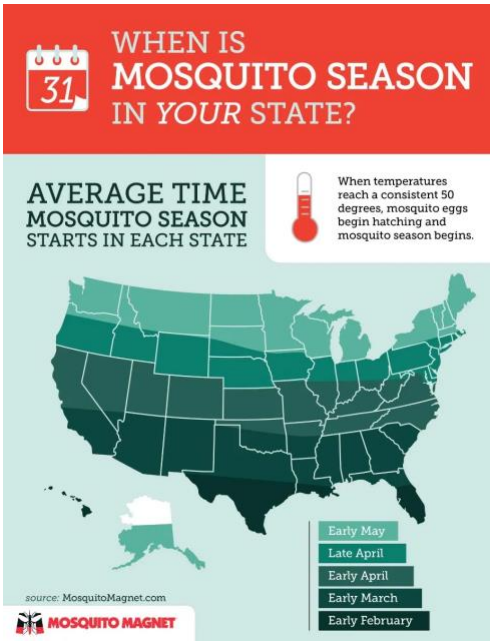
Promote responsible disposal of items that can hold water:
Encouraging proper disposal of tires, buckets, and other containers can help prevent mosquito breeding.

Provide tips on how to avoid mosquito bites:
This includes wearing long sleeves and pants, using insect repellent, and avoiding peak mosquito activity times (dawn and dusk).

Inform the public about the risk of mosquito-borne diseases:
Public health organizations and local authorities can inform the public about the diseases that mosquitoes can transmit, such as West Nile virus, Zika virus, and malaria.

By focusing on these strategies, mosquito control programs can effectively prepare for mosquito season and protect communities from mosquito-borne diseases and bites.

https://vectorbio.rutgers.edu/outreach/ipm.php



education of all pesticide applicators is of high importance and emphasis for UGA Cooperative Extension.

While all pesticide applicators bear a significant responsibility to minimize pollinator exposure to pesticide applications, beekeepers also have a responsibility to inform applicators about the presence and location of their honeybee colonies.

Pesticide applicators, and mosquito control districts in particular, cannot avoid honeybee colonies if they are not aware of their presence. Consequently, the best thing a beekeeper can do to protect their hives from mosquito control activities is to be educated about the local mosquito control practices.

For mosquito control practitioners, knowing a honeybee colony is present is just part of the equation. Mosquito control is a complex issue. It is conducted in a wide range of habitats and social structures and includes both public health and nuisance aspects. There are usually valid reasons to justify the effort and expense of a mosquito control application. Either surveillance data has identified a significant nuisance population, there is a public health issue due to an identified disease transmission risk, or multiple complaints have been received. No matter the cause, mosquito populations that are building to levels sufficient to warrant a mosquito control application should be targeted in a comprehensive manner.

Mosquito control professionals should fully support the use of UGA Extension Circular 1154, Best Practices of Integrated Mosquito Management (https://extension.uga.edu/publications/detail.html?number=c1154), which includes a stepwise progression of activities that will suppress a mosquito population in the most efficient manner. Education, source reduction, surveillance and larviciding can all be conducted prior to considering an adulticide application. Education is the foundation that all levels of mosquito control build upon. Knowledge of the mosquito life history provides a better understanding of how to target the pest populations most effectively using the wide range of techniques that are available.

While mosquito control personnel work to minimize adulticide applications using IMM best practices, the responsibility for the health and welfare of bee colonies rests ultimately with the beekeeper. As a result, there are things beekeepers can do to minimize the risk to their hives. In addition to communicating with the local mosquito control authorities, hives can be located in a deliberate manner. Strategically positioning hives 300 feet or more away from potential truck spray routes can significantly decrease the potential exposure to all ground-based adulticide applications. For situations where hives will be located closer to spray routes, barriers such as fencing, hedges, or shrubbery can offer significant protection by reducing the exposure potential. Barriers on two sides are good, but a three-sided barrier would be even better. Hive openings should face away from the potential spray route, again reducing the potential for bees to be exposed to mosquito control applications.

When mosquito control practitioners notify beekeepers of an adulticide application, hives can be covered with moist burlap, sheets, hive nets, or any other type of breathable material to keep bees in the hive during the timed application and reducing the potential for pesticide deposition on the hive. Keeping the foragers inside for a short period will help to reduce any potential residual pesticide exposure. However, honeybees have the potential to forage up to 5 miles in search of pollen and nectar and as a result can be exposed to pesticides in many scenarios beside mosquito control applications. This biological trait requires that beekeepers be cognizant of all facets of the environment around their selected colony site location. Mosquito control is usually conducted to reduce the potential for disease transmission or reduce nuisance populations. The less densely populated an area, the less likely it is to have significant mosquito control activity.

The recent rise in individual yard treatments for mosquito control has significantly increased the number of residual barrier treatments being conducted in some communities. Concerned homeowners need to communicate with their neighbors, particularly when vegetation that is highly attractive to pollinators is present near property lines.

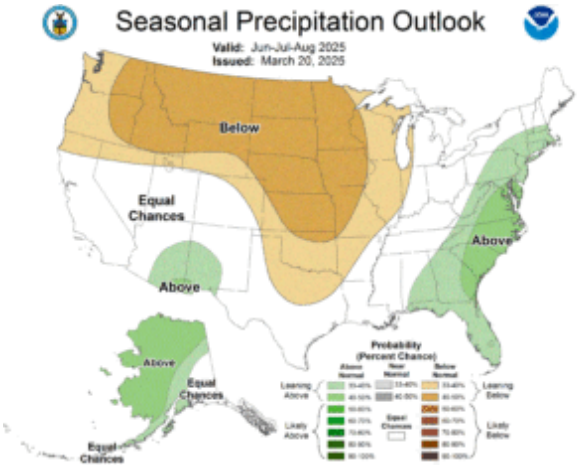
When possible, vegetation that is most attractive to pollinators should be planted toward the center of a property so that pollinators are less likely to be exposed to a neighbor's control treatments. Fences and vegetative border plantings that are less attractive to pollinators will also help to minimize the impact of a neighbor's pesticide application. In addition to civil communication between neighbors about pesticide applications, creating a cooperative, diligent approach to eliminating standing water in a community to reduce mosquito habitats can go a long way toward protecting all of our pollinators.

In summary, both mosquito control practitioners and beekeepers play a vital role in reducing the risk of pesticide applications to pollinators. Mosquito control should be conducted according to best practices of IMM. It is at this point that communication, hive placement, and care becomes the most important parts of the intersection of mosquito control and pollinator protection. Beekeepers should know when mosquito spraying is taking place and mosquito control must know where honeybee colonies are located in order to minimize pollinators being exposed unnecessarily. Enhanced training, education, and communication should become routine practice for both groups in order to reduce the exposure of all types of pollinators to mosquito control applications.

https://secure.caes.uga.edu/extension/publications/files/pdf/C%201188_2.PDF

Mosquito Predictions for 2025 in the SE United States

According to available information, and likely someone with some data and a model or two (or perhaps a crystal ball), in the Southeast USA for 2025, mosquito populations are predicted to be affected by a few factors, including a potential mid-summer surge and the possibility of an early start to the season.



- **Climate Change:**

  Warmer temperatures and altered weather patterns, such as increased rainfall or droughts, can create favorable breeding environments and extend mosquito seasons.

- **Human Activities:**

  Urbanization and land use changes can create new breeding sites and disrupt natural mosquito control measures.

- **Mosquito Adaptations:**

  Studies suggest mosquitoes may be adapting to warmer temperatures, potentially allowing them to thrive in previously unsuitable areas.

- **Disease Transmission:**

  Increased mosquito populations can lead to higher risks of mosquito-borne diseases like West Nile virus, dengue, and Zika.

- **Control Measures:**
  Human interventions, like insecticide use and biological control, can impact mosquito populations, making predictions complex.

Predictions and Implications:

- **Increased Risk:**

  Climate change and urbanization are likely to increase mosquito populations in many areas, potentially leading to higher risk of disease transmission.

- **Wider Geographical Range:**

  Mosquitoes may expand their geographical range into previously colder areas, posing new risks to communities.

- **Need for Preparedness:**

  Public health agencies and communities need to prepare for potential increases in mosquito populations and the associated health risks.

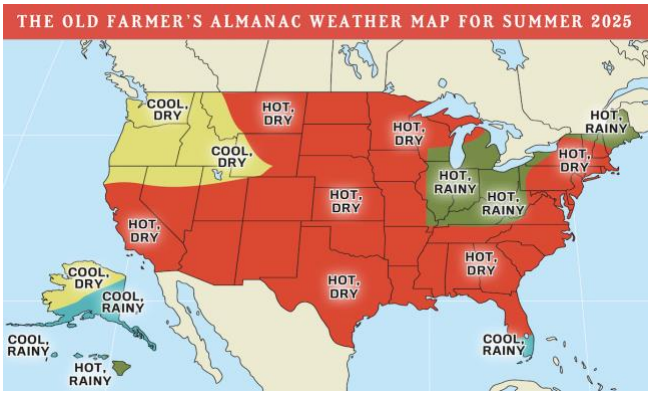
Spring

Two general themes stick out in the 2025 spring forecast: warmth and wetness. Thanks to a solar cycle, which is set to reach its 11-year peak this summer, the United States is expected to see higher-than-average temperatures throughout April and into May, with a few regional exceptions.

Summer

After last year marked one of the hottest summers since weather has been recorded, the Old Farmer's Almanac's forecast is predicting that this summer will be just as intense. The outlook predicts near-normal temperatures in most parts of the country in June, with July and August expected to see a buildup of heat.

In summary, while the precise future of mosquito populations is uncertain, current trends and scientific understanding suggest a greater potential for mosquito-borne diseases and a need for proactive measures to mitigate the risks.



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