



The University of Georgia

College of Agricultural and Environmental Sciences  
*Department of Entomology*

# THE GEORGIA PEST MANAGEMENT NEWSLETTER

Your source for pest management and pesticide news

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## FQPA AND REREGISTRATION

**Looking into the crystal ball for the year ahead, I see carbamates, pyrethroids, and copper.** The EPA is scheduled to complete its assessment of the carbamate insecticides, in a process similar to the one the Agency used for the organophosphates. The insecticides carbaryl (Sevin) and aldicarb (Temik) seem the most likely to face additional restrictions. Because carbaryl has a broad household market and registrations on many food crops, the risk assessment may indicate too much potential exposure to children. Additionally, there are some concerns about potential cancer risks associated with carbaryl. Continuing misuse of aldicarb may bring about new restrictions and/or cancellation of some uses. People regularly use aldicarb to poison nuisance dogs, cats, and other animals. A lot of strings have been pulled to keep aldicarb available; it is a highly toxic material that has been implicated in a number of serious incidents. The EPA is unlikely to tolerate additional negative reports.

Reregistration and FQPA activities have restricted and eliminated many uses of organophosphate insecticides, particularly in the household market. As the availability of organophosphates waned, the marketing and use of pyrethroids expanded to fill the void. Relative to the organophosphates, pyrethroids are less acutely toxic to humans and pets. However, increasing use brings growing concerns about the risks associated with pyrethroids.

Although pyrethroids are relatively less toxic to birds and mammals, this group of insecticides can be very hard on aquatic organisms. The lethal concentration for some pyrethroids is as low as 2 parts per billion (ppb). It is no surprise that pyrethroid insecticides kill aquatic insects and their kin, but some pyrethroids are highly toxic to fish as well.

Additionally, there is evidence that pyrethroids can cause ill effects or change the behavior of aquatic organisms at a concentration far below the lethal level. To protect themselves from predation, caddis fly nymphs build a case around their body. A concentration of 0.2 ppb was enough to make the nymphs leave their cases and not rebuild them.

Although there is some pyrethroid run-off from agricultural operations, urban use of these pesticides may be a more important source of water pollution. Pyrethroids have replaced organophosphates for many landscape uses, and fertilizer products containing pyrethroids are common. Additionally, homeowners tend to be less conscientious than their agricultural counterparts when they use pesticides.

There is also evidence that some pyrethroids have hormonal activity in humans and other animals. Hormones are chemical messengers in the body; typically, they are active at very low concentrations. Among other things, hormones influence sexual development. It is troubling to think about chemicals commonly used around the home that could affect the sexual development of a child. Life is confusing enough without a third opposite sex. Further research is necessary to gauge to scope of this risk, but it is already politically charged because it includes a potential, undefined risk to children.

Even with the additional insight into the risks of pyrethroids, many people would contend that the risk picture is more favorable with pyrethroids replacing organophosphates. The EPA has scheduled reregistration for permethrin, resmethrin, and cypermethrin in 2006, and other pyrethroids will be reviewed by 2008. If reregistration indicates risk concerns, the other pyrethroids may come under scrutiny as well.

(Science News, 2-4-06, <http://ehpnet1.niehs.nih.gov/docs/1999/107p173-177go/abstract.html>)

**It is time to act if you care about copper-based pesticides.** Coppers are widely used in orchards and row crops; they are considered to be very important in controlling diseases and managing resistance to other pesticides. Coppers are also used in aquatic situations to control weeds, algae, and mollusks.

The EPA is concerned that copper compounds cause unreasonable risks for aquatic organisms (including fish), birds, and mammals. Exposures exceed the Agency's level of concern at labeled rates. The EPA risk assessment is based on the highest labeled rates, and EPA is interested in possibly revising their risk assessment if actual application rates are lower than the labeled maximum.

If you have information about how copper compounds are used in the real world, you need to let the Agency know. Testimonials and whining do little good. Keep your input as short as possible and stick to the facts. It is possible to save coppers if the maximum labeled rate can be reduced without making the compounds useless. Also consider the minimum number of applications that growers could accept while maintaining the utility of the compounds. Finally, determine if there are effective alternatives for some copper uses. It may be necessary to give up something to keep the more critical copper uses.

This web site will lead you to the details of the risk assessment and tell you how to submit information. <http://www.epa.gov/fedrgstr/EPA-PEST/2006/January/Day-25/p915.htm>

You will find a sample, fill-in-the-blank letter supplied by USDA at the end of this newsletter. The deadline for comments is March 27, 2006.

**The EPA is reviewing lindane seed treatments.** Most lindane uses have been phased out, but lindane is still commonly used to treat seed before planting.

Lindane is an organochlorine insecticide. DDT, dieldrin, and chlordane are other examples. Lindane seed treatments are one of the few remaining uses for organochlorines in the U.S., but organochlorines are still commonly used in some developing countries.

One of the major problems with the organochlorines was their persistence in the environment. Even though DDT has not been registered in the U.S. for more than 30 years, it is still commonly detected (at very low levels) in food. A number of organochlorine insecticides are labeled as "persistent organic pollutants" or POPs. There is global pressure to eliminate POPs. Lindane has recently been included as a POP, which has triggered renewed EPA scrutiny. Lindane may hang around a while longer, but the POP designation will probably mean the demise of lindane.

# BIOTECHNOLOGY

The USDA and the Department of Energy (DOE) will share resources and coordinate the study of plant and microbial genomics; the first project will sequence the soybean genome. **Soybean is of particular interest to DOE because of its potential for biodiesel. Most people seem to agree that the U.S. is overly dependent on foreign sources for energy. Biodiesel has the highest energy content among the alternative energy sources, and it produces much less pollution than conventional fuels.**

Additionally, the production infrastructure is in place. Farmers in the U.S. produced soybeans on nearly 75 million acres in 2004. The resulting 3.1 billion bushels of soybeans were valued at more than \$17 billion, exceeded only by the value of U.S. corn production. If biodiesel becomes popular, the market for soybeans could expand exponentially. It could be a good shot in the arm for U.S. agriculture.

The soybean genome comprises about 1.1 billion base pairs. The human genome and the maize genome each have about twice that many. <http://www.energy.gov/news/2979.htm>

**2005 marked the tenth anniversary of the commercialization of genetically modified (GM) crops, and business is growing like a two-headed cantaloupe.** In 2005, the billionth acre of a GM crop was planted by one of 8.5 million farmers in more than 20 countries. Clearly, farmers are embracing the new technology, even if some consumers remain skeptical. Since 1996, planting of GM crops has increased by a double-digit rate each year. Today, the global area planted to GM commodities is more than 50 times the area growing GM plants in 1996. <http://www.isaaa.org/kc/>

**On December 9, a French court acquitted 49 activists who destroyed genetically modified (GM) plants after ruling their actions were justified.** The 49 defendants had uprooted GM maize in two separate incidents in 2004 and 2005. From the court, "The defendants have shown proof that they committed an infraction of voluntary vandalism in a group to respond to a situation of necessity," and that situation of necessity "resulted from the unbridled distribution of modified genes that constitutes a clear and present danger for the well-being of others, in the sense that it could be the source of contamination and unwanted pollution." They ordered the defendants to pay a civil fine of about \$7,000 (less than \$150/person). The company testing the GM maize sought more than \$450,000. (Agence France Presse, 12/9/05). *A tip o' the cap to Walter Reeves for this story.*

If this decision stands, this case could set an interesting and important precedent. Many groups may find this small judgment an encouragement to attack and destroy a great deal of research that they consider "a clear and present danger for the well-being of others, in the sense that it could be the source of contamination and unwanted pollution." In my opinion, the companies profiting from GM crops have not done enough to engage the public and convince people of the advantages of GM crops. Both the federal government and private companies have strenuously discussed and tested GM plants for human and environmental safety, and the risks are generally considered to be quite low. However, the attitude of the big companies and USDA has primarily been to lay low and wait for the public to simply accept GM commodities on faith. This strategy is not illogical, but it is somewhat risky. Ignorant people are more easily frightened, and their actions are more unpredictable.

**According to scientists at the University of Central Florida, enough anthrax vaccine to inoculate every person in the U.S. could be produced inexpensively in a single acre of tobacco.** The anthrax vaccine is currently produced through an expensive fermentation process, and the resulting vaccine can produce harmful side effects. The new vaccine protected mice from high exposures to anthrax without the side effects.

Dr. Henry Daniell and his team injected the gene coding for the vaccine into the chloroplasts genome of tobacco. The tobacco plants produced the vaccine, and it was isolated and injected into mice. The mice survived doses of anthrax exceeding human exposures by several fold. (UCF, 12-20-05 via Chemically Speaking, January-06)

## DON'T DO IT

**Do not fall for the familiar spring scam claiming to have pesticides cheaper through mail order.** The usual strategy promises a common pesticide at an unbelievable price. If the purchaser (a.k.a., sucker) ends up with an actual pesticide, it will be diluted to the point where the actual price greatly exceeds the same amount of pesticide purchased from a reputable dealer. Not every mail-order/internet offer is bogus, but the buyer should be wary. Also, consider what you might do if the pesticide does not perform as promised. A guarantee from an unknown party might be what it appears.

## FEDERAL NEWS

The EPA has released a final rule that will streamline the process for granting emergency exemptions (Section 18) for pesticides. Under Section 18, the Agency can grant permission for growers to apply a pesticide for an unregistered use if there is a documented emergency. For example, cotton growers in Georgia might get permission to use a pesticide that is not labeled for cotton if a new pest appeared that could not be controlled with currently registered cotton pesticides.

The revisions will help solve two problems. Under the old system, a state would typically have to apply for a new exemption each year, even if the situation were exactly the same. It was a waste of time for both the state and the EPA staff. The new process will make it easier for states to extend an exemption if necessary. Secondly, it was always somewhat difficult to empirically demonstrate a financial emergency under the old rules. By definition, an emergency is usually a problem for which you do not have much data. The second revision establishes an improved and more uniform approach to determining and documenting a significant economic loss, the most commonly used criterion for demonstrating an emergency condition. Finally, the Agency is making some minor revisions to clarify that quarantine exemptions may be used for control of invasive species, and to revise certain administrative aspects of the regulations.

(EPA Pesticide Program Update 01/27/2006)

## HEALTH AND THE ENVIRONMENT

**The EPA has an interesting challenge regarding safe packaging for pesticides.** Obviously, one primary goal is to minimize the risk to small children. However, it is somewhat important for future sales to ensure that grown-ups can open the package without requiring the user to “apply blow torch along dotted line”. As you might imagine, the EPA has specific guidelines to test the ease of access for both children and adults.

Here are some excerpts that will give you some insight into the challenges that pesticide registrants face. The test consists of allowing the children (42-51 months old) five minutes to open the package or gain access to its contents. If either child has not opened his or her package, the tester shall demonstrate how to open the package. If the children have not tried to use their teeth they are told they may do so, and a second 5 minutes is allowed to open the package or gain access to its contents. *It would be quite a challenge to create packaging that a four-year old cannot open using their teeth.*

Senior adult test panel consists of 100 seniors 50-70 years old (50-54 years old 25%, 55-59 years old 25%, 60-70 years old 50%), 70% of whom are female. A pass on the Senior Adult Test involves opening the test package in the 5-minute test period and opening and properly resealing the test package in the second 1-minute test period. A pass for unit dose packaging involves opening a single (unit) package during both test periods. *The adults can use their teeth if they can find them. I am not quite to the senior class, but I do not think I will spend five minutes opening a pesticide container. I would either have lost interest or cranked the chain saw.*

The entire process of balancing priorities to minimize risks and maintain benefits is fascinating. You can read more about child-resistant packaging here <http://www.epa.gov/opprd001/crp/>.

**The EPA has issued a final rule regarding the use of human subjects for pesticide testing.** EPA significantly strengthens and expands the protections for participants in third-party research. The rule:

- (1) prohibits new research involving intentional exposure of pregnant women or children, intended for submission to EPA under the pesticide laws;
- (2) extends the ethical protections in the Federal Policy for the Protection of [Human Subjects of Research \(the “Common Rule”\)](#) to other human research involving intentional exposure of non-pregnant adults, intended for submission to EPA under the pesticide laws;
- (3) requires submission to EPA of protocols and related information to ensure any future studies meet this highest ethical safeguards; and
- (4) establishes an independent Human Studies Review Board (HSRB) to obtain expert peer review of both proposals for new research and completed third-party intentional dosing, research on which EPA may rely on under the pesticide laws.

In addition, the final rule:

- (1) categorically prohibits any EPA-sponsored research involving intentional exposure of pregnant women or children to any environmental substance; and
- (2) adopts regulations of the Department of Health and Human Services to provide additional protections beyond those of the Common Rule to pregnant women and children in EPA observational research where there is only minimal risk and when research which does not involve intentional exposure to any substance.

**In 2003, the Natural Resources Defense Council (NRDC) sued EPA in federal court, contending that the Agency was not ensuring that atrazine does not affect the endangered/threatened species or the critical habitat of the species named in the lawsuit.** The Endangered Species is kind of a trump card because no Federal Agency may take action or refuse action that will cause harm to listed endangered or threatened species.

These species were listed in the NRDC lawsuit. You can find more information about them at <http://www.fws.gov/endangered/wildlife.html>.

- Loggerhead sea turtle (*Caretta caretta*)
- Leatherback sea turtle (*Dermochelys coriacea*)
- Green sea turtle (*Chelonia mydas*)
- Kemp’s ridley sea turtle (*Lepidochelys kempii*)
- Shortnose sturgeon (*Acipenser brevirostrum*)
- Dwarf wedge mussel (*Alasmidonta heterodon*)

- Pallid sturgeon (*Scaphirhynchus albus*)
- Topeka shiner (*Notropis tokepa* (=tristis))
- Purple cat's paw pearly mussel (*Epioblasma obliquata obliquata*)
- Northern riffleshell (*Epioblasma torulosa rangiana*)
- Barton Springs salamander (*Eurycea sosorum*)
- Alabama sturgeon (*Scaphirhynchus suttkusi*)
- Fat pocketbook pearly mussel (*Potamilus capax*)
- Pink mucket pearly mussel (*Lampsilis abrupta*)
- Shiny pigtoe pearly mussel (*Fusconaia cor*)
- Fine-rayed pigtoe mussel (*Fusconaia cumeolus*)
- Rough pigtoe mussel (*Pleurobema plenum*)
- Heavy pigtoe mussel (*Pleurobema taitianum*)
- Stirrup shell mussel (*Quadrula stapes*)
- Ovate clubshell (*Pleurobema perovatum*)
- Southern clubshell (*Pleurobema decisum*)

The EPA settled the lawsuit with no admission of wrongdoing by agreeing to take the following action. For each of the 21 named species, the Agency will make an "effects determination" to determine whether its action:

1. has no effect on the species,
2. may affect but is not likely to adversely affect the species, or
3. may affect and is likely to adversely affect the species.

If the study shows adverse effects, the EPA will consult with the U.S. Fish and Wildlife Service or the National Marine Fisheries Service.

The EPA also agreed to the following timetable for action.

- No later than August 31, 2006, EPA will make effects determinations for atrazine as it relates to eight of the named species.
- No later than February 28, 2007, EPA will make effects determinations for atrazine as it relates to another eight of the named species.
- No later than August 31, 2007, EPA will make effects determinations for atrazine as it relates to the final five named species.

The Agency would like public input into the settlement of the lawsuit. The comments will help determine if the EPA reconsiders any part of the agreement. For more information, contact EPA's Press Officer, [Enesta Jones](mailto:Enesta.Jones@epa.gov) at 202-564-7873 or Office of Pesticide Programs' [Arty Williams](mailto:Arty.Williams@epa.gov) at 703-305-7695. You will find the details here [http://www.epa.gov/espp/NRDCsettlement\\_fs.htm#agreement](http://www.epa.gov/espp/NRDCsettlement_fs.htm#agreement)

This decision could have important implications for atrazine and other pesticides. It will be expensive to make this determination for 21 species in a relatively short time. Secondly, it would not be surprising if atrazine adversely affected one or more species in this group. Atrazine is widely used, and it is regularly detected in water across the U.S. Finally, you can bet that NRDC and other groups are already preparing similar lawsuits that target other pesticides.

Dear Readers:

The Georgia Pest Management Newsletter is a monthly journal for Extension agents, Extension specialists, and others interested in pest management news. It provides information on legislation, regulations, and other issues affecting pest management in Georgia.

Do not regard the information in this newsletter as pest management recommendations. Consult the [Georgia Pest Management Handbook](#), other Extension publications, or appropriate specialists for this information.

Your input in this newsletter is encouraged.

If you wish to be added to the mailing list, just call us at 706-542-2816.

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Or visit us on the Web. You will find all the back issues there and other useful information.

<http://pubs.caes.uga.edu/caespubs/entomology/pestnewsletter/newsarchive.html>

Sincerely:



Dr. Paul Guillebeau, Associate Professor & Extension Entomologist

**[DATE]**

Via Hand Delivery

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Office of Pesticide Programs (OPP)  
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Attention: Docket ID Number EPA-HQ-OPP-2005-0558

Via U.S. Mail

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Attention: Docket ID Number EPA-HQ-OPP-2005-0558

Re: Copper Pesticide Risk Assessments

Dear Sir or Madam:

On behalf of \_\_\_\_\_, we submit these comments on the U.S. Environmental Protection Agency's (EPA) risk assessment for copper, which was released to the public for review on January 25, 2006, 71 FR 4133-4135. We are deeply troubled by the rushed process EPA has undertaken to complete the preliminary assessment and the conclusions the copper risk assessment document intimates.

I am a (grower, University professor, crop advisor, etc.) working with (crop(s)) in the State of \_\_\_\_\_. Copper pesticides are absolutely essential to the production of (crop(s)). We have provided to the US EPA through the Copper Sulfate Task Force information regarding the use rates of copper pesticides on (crop(s)). Unfortunately, the Agency did not utilize this information in the Draft RED and therefore has greatly overestimated the quantity of copper actually applied to (crop(s)) and the associated risk.

In the production of (crop(s)), copper is absolutely essential. It is the only fungicide available to us to which fungal and bacterial resistance has not developed. Therefore, it would be impossible to operate under Integrated Pest Management (IPM) if this tool is taken away from (crop(s)) production. Further, copper is a key product in resistance management practices. Unlike almost every newer fungicide, copper is a broad-spectrum product, making it an ideal product to rotate with the newer products with specific

modes of action. For those who grow organic crops, copper is also an absolute necessity. It is the only fungicide approved for control of many diseases in organically grown fruits and vegetables.

Copper is a naturally occurring element and has a long history of safe and effective use in both Agriculture and Water Treatment. When it is used to protect (crop(s)), it is redistributed in the environment, but the amount of it present in the environment is not changed. Likewise, as it dissociates into ions as soon as it reaches the soil or aquatic environment, it is rapidly complexed and inactivated, becoming unavailable for biological activity.

Copper, as a Bordeaux mixture, is the second oldest known fungicide, having been used since 1885. When Pierre Marie Alexis Millardet discovered that this mixture had fungicidal activity the history of crop protection was changed forever. For over a century growers have been protecting their crops from fungal and bacterial diseases and clearing their drinking water reservoirs from fouling algae and weeds. During the centuries of cost effective disease control on essentially every crop and cost effective clearing of reservoir waters, there have been no reports of adverse effects upon non-target mammalian or avian species and no long-term effects upon aquatic species. It has been demonstrated over the years that copper salts can be applied directly to fish-containing waters following label directions without adverse effects on any fish species. It has also been demonstrated that even the most sensitive daphnid species recover from direct application of copper salts. It is nearly inconceivable that there could be a product used for over a 120 years with fewer documented environmental incidents than the copper salts used as fungicides, bactericides, and aquatic herbicides. The EPA must consider this centuries old history of safe use in the agricultural and water environment when issuing the RED.

The Agency currently has in their possession data on (crop(s)) that demonstrates that copper can be safely used in the (crop(s)) protection (or) (aquatic weed) system. These data were provided to the EPA before the draft RED was published in the Federal Register, however, the EPA did not choose to reference this information. If the Agency will take the time to conduct their risk assessments based upon the data that have already been provided, they will find that the environmental risk of using copper salts is acceptable.

The EPA Toxicology Chapter on copper pesticides concludes that there is no risk associated to man from the use of copper in crop production. In fact the Agency has recommended that all tolerances for copper in crops be revoked and all forms of copper on food and commodities be exempt from Tolerance. Therefore, by the EPA's own judgment, copper pesticides are among the safest of all crop protection, aquatic, algal, and weed control chemicals and, if unavailable on (crop(s)), would require the increased use of other pesticides of greater toxicity.

EPA has greatly condensed the RED process for copper pesticides and has allowed only a single comment period of less than 60 days. This is completely unreasonable, as the environmental chapter alone is approximately 600 pages long and cannot possibly be reviewed and evaluated in a 60 day period.

We support the comments the copper registrants are submitting to EPA through the Copper Sulfate Task Force on the copper risk assessment and urge EPA to make changes outlined in those comments.

We also believe there are critical scientific issues relevant to the conclusions in the assessment that must be resolved, and that EPA must allow adequate notice and opportunity for comment on their resolution before the copper risk assessment is released. Much of the material in the risk assessments is difficult for those not educated in risk assessments to follow and comprehend.

EPA has repeatedly assured stakeholders that their input is of the utmost importance. Nonetheless, we believe EPA has neither reviewed nor incorporated any of the use and usage information the grower

community has provided. With the condensed RED process, it appears the EPA has not taken the time to consider these data, including rates, timing, and areas treated, as provided by the copper stakeholders.

As a stakeholder in the risk assessment process that is not fully educated on how EPA conducts risk assessments, we have found the 60-day comment period to be insufficient. Therefore, we request an extension of the comment period to respond to the copper risk assessment documents. Grower groups face a tremendous challenge in attempting to understand and comment on the very large amount of information currently used as the basis for EPA's assessments of copper.

Docketed materials involve very complex analysis; the supporting dockets amount to thousands of pages of material. Our review of these materials to date does not indicate that they adequately understand current use patterns for copper. Moreover, somewhat unique to these compounds, there are a large number of co-dependent use patterns. EPA must allow the proper amount of time for robust participation by stakeholders. EPA should not rush documents out of the door simply to meet the Food Quality Protection Act August 2006 deadline. This is particularly true since the EPA can reassess the tolerances based upon current information without issuing the final RED.

Despite our concern, we are committed to working with EPA to assist EPA in meeting its obligations and relevant deadlines with regard to copper. We believe EPA must engage in significantly more outreach to growers or others with field knowledge of copper application methods, essential uses, interactions among products, etc. Many such persons would be pleased to share their expertise and the benefit of their real-world experience with these products, but have not yet had the opportunity to do so. To date, the assessment process seems to be driven simply by copper's aquatic toxicology, without adequate review of often complex use patterns. The limitations of this process are especially troubling given the very wide range of copper uses and the many different crops involved.

**[CLOSING],**

## **SIGNATURE**

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cc: **[Your Senators]**

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