

Chemically Speaking

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UF and Florida Team to Provide Electronic Testing

The University of Florida’s Institute of Food and Agricultural Sciences has teamed with state agriculture officials to create a new, more convenient testing system for those seeking pesticide applicator licenses. Fred Fishel, a UF/IFAS agronomy professor who specializes in pesticides, said in the past, testing and certifying applicants could take several weeks and relied on documents being mailed back and forth between county Extension offices and the Florida Department of Agriculture and Consumer Services in Tallahassee. But the agencies recently unveiled a new, much quicker web-based system. With it, applicants can go online to schedule a time and date to take an online test administered at UF/IFAS Extension offices in three Florida counties: Hendry, Palm Beach and Duval.

The online testing system is scheduled to be expanded in the near future to include about 10 to 12 counties, meaning applicants won’t have to travel

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as far to reach a test site, he said. The web-based system links FDACS and UF/IFAS Extension offices electronically, making the testing system unique from other states that have already implemented computer-based testing systems, Fishel said. Other states using computer-based systems rely upon software, rather than an electronic connectivity between organizations. "We're kind of a pioneer in this, because there are no other states with a web-based system that I know of," he said.

Those who handle pesticides and must be licensed include pest control professionals, private agriculture workers, aerial applicators, foresters, lawn care professionals and more. Those licenses have been mandated by the federal government since the 1970s. Some 6,000 exams are administered to agricultural pesticide applicators each year by UF/IFAS county Extension offices, Fishel said, and as many as 1,500 more to "structural" applicators, who go into homes, schools and other buildings to apply pesticides.

Weldon Collier, program planning coordinator for FDACS' division of agricultural environmental services, said there are times when an applicant needs a license quickly in order to secure a job. "This is a much more automated system and it allows us to expedite the process for them," Collier said. "If somebody needs to get a license quickly, hopefully this system will afford them that opportunity." The tests cover about 20 categories; the questions range from fairly general to specific, including some that require applicants to employ mathematical formulas to arrive at the correct answer. On rare occasions in the past, Fishel said, someone would walk into a UF/IFAS county Extension office, grab a test and flee. That meant the test had to be thrown out, and Fishel would have to spend time creating a new one.

With the new system, applicants must first obtain a voucher number from the FDACS website. The voucher number is specifically assigned to the individual who will take the exam. The applicant then uses the voucher number to schedule the exam at a UF/IFAS county Extension office offering the service. The applicant must provide a valid state-issued driver's license or ID card along with the voucher number, which should eliminate security breaches, he said. Applicants take the tests on laptop computers programmed with the test and nothing else, so test-takers have no option to surf the web looking for answers.

Silver Fabric Treatment in Court

As the U.S. Court of Appeals for the Ninth Circuit weighed whether to sign off on an Environmental Protection Agency (EPA) approval of a pesticide sewn directly into clothes and other fabrics, it appeared the decision might turn on a scientific distinction familiar to parents everywhere: the difference in chewing habits between a 1-year-old infant and a 3-year-old toddler.

Judges Jay Bybee and Jerome Farris' paternal instincts seemed to come into play as they debated with lawyers for the Natural Resources Defense Council, the Environmental Protection Agency and the pesticide manufacturer about how a young child's teeth, gums, saliva and swallowing could affect ingestion of invisible nanosilver particles. "We may have more saliva but less swallowing" with a 1-year-old, Bybee said. "We have more drooling." "We need a drooling study," he joked.

The issue in *Natural Resources Defense Council v. EPA* was whether the EPA properly granted conditional registration for Swiss manufacturer HeiQ's antimicrobial product AGS 20 under the

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Federal Insecticide, Fungicide and Rodenticide Act. The product contains microscopic particles of silver that are applied to, or sewn inside, textiles like clothes, blankets and pillowcases, to suppress bacteria growth. The NRDC attorney Catherine Rahm argued that the EPA erred by assuming in its risk assessment that 3-year-olds would be the most vulnerable consumers. "Infants are more likely than any other subgroup to chew on fabrics that could contain this pesticide," Rahm told the court.

Rahm also stated that EPA routinely distinguishes between infants and children in its studies. The agency's claim that 3-year-olds chew more aggressively than infants is unsupported by the record, she argued. Infants have "hard gums," Rahm said, and "on the other side of the ledger, infants have a lot more saliva, so for all we know that's a more important factor for extracting a pesticide." "It may be and I'm not going to speculate on it," Farris said, "but with the saliva, out comes everything that's inside that mouth."

When Matthew Henjum of the Justice Department's environmental defense section took the lectern, Bybee, a father of four, counseled him not to spend much time arguing NRDC doesn't have standing to bring its claim. "We've got affidavits in the record from parents who said 'Look, we're very concerned about this,'" Bybee said. For challenges to EPA rule making, "the standards for standing are just not that high."

Bybee and Farris also encouraged Henjum and Benjamin Shatz, an attorney for HeiQ, to skip the waiver argument. Farris suggested the court did not want to rule on hyperprocedural grounds, "and then we find out, 'uh oh, a lot of babies are going to suffer.'" On the merits, Henjum argued that EPA made extremely conservative assumptions, modeling a 3-year-old who wore textiles treated with AGS 20 while simultaneously chewing on them. The agency

has a long-standing practice of treating 3-year-olds as the most vulnerable consumer to textiles, he added. "This is a presumption EPA has developed over time based on its institutional expertise," he said, and validated in this instance by an independent advisory panel of scientists.

Bybee wanted to know if the product would come with a warning label. "Actually," said Shatz, "the idea here is that because this is an added feature of the product, it would be revealed, maybe not so much as a warning, but as part of the advertising. "It's going to be called something other than AGS 20," Bybee said. "It's going to be called 'super coating that makes you not stinky.' And that's very different from saying, 'This contains nanosilver that you don't want to let your infants chew on.'" (*Law.com*, 1/16/13).

Dow's GM Corn Delayed

Dow AgroSciences officials announced in January that they now expect the first sales of Enlist® corn in 2014. Previously officials had set the 2013 planting season as a target, but U.S. farmers are already buying seed for planting this spring, and Dow has yet to secure U.S. approval for Enlist®. Dow wants to roll out Enlist® corn, and then soybeans and cotton to be used in combination with its new Enlist® herbicide that combines the weed-killers 2,4-D and glyphosate. The Enlist® crops are genetically altered to tolerate treatments of the Enlist® herbicide mixture. The goal is that the tandem will eradicate weeds that have become resistant to glyphosate alone.

Opponents have bombarded Dow and U.S. regulators with an array of concerns about Enlist®, which will compete with Monsanto's Roundup® Ready system. Genetically altered Roundup® Ready corn and soybeans now dominate the U.S.

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corn and soybean market. Critics warn that adding more herbicides to already resistant weed populations will only expand and accelerate weed resistance. Some have likened the problem to a "chemical arms race" across farm country.

Dow's Enlist® herbicide is also controversial because 2,4-D, or 2,4-dichlorophenoxyacetic acid, was one of the ingredients in Agent Orange, the Vietnam War defoliant that was blamed for numerous health problems suffered during and after the war. Although the main health effects of Agent Orange were blamed on the other component of the mixture (2,4,5-T) and dioxin contamination, critics say 2,4-D has significant health risks of its own. Several medical and public health professionals have sent a letter to the U.S. Department of Agriculture warning of health threats that could accompany an increase in 2,4-D use.

Dow officials said that the product is needed soon as market research shows that cropland acres infested with glyphosate-resistant weeds increased 80 percent over the past two years. As it awaits regulatory approval, Dow said it would showcase the Enlist® system in five technology centers established in the U.S. Midwest and U.S. South to train farmers and seed sellers on the application and management of Enlist®. It also said it will offer more than 100 small Enlist® field plots at seed company and retail locations and it is hoping to also set up on-farm "experience plots" to demonstrate the product. Dow said it plans on receiving U.S. regulatory approval this year and will "ramp up" seed production and its supply of Enlist® herbicide to support commercial sales starting in late 2013 for 2014 planting. Canada granted regulatory approval in October.

Others are hoping the USDA and EPA are taking a hard look at the potential problems associated with Enlist®. "Those of us who have

concerns about this are all kind of holding our breath... wondering one way or other what is going to happen with this," said Doug Gurian-Sherman, senior scientist in the food and environment program with the Union of Concerned Scientists. Gurian-Sherman said Enlist® represents a "head-in-the-sand" approach to weed resistance. The USDA has received more than 450,000 comments opposing approval of the 2,4-D tolerant cropping system, according to the Center for Food Safety, which opposes Enlist® and has threatened to sue the government if it is approved. (*Reuters*, 1/18/13).

Pesticide Registrations and Actions

Food Related Actions

- Based on a request by IR-4, the EPA has approved tolerances for the insecticide fenprothrin (Danitol®). Tolerances of importance to the region include acerola, atemoya, biriba, cherimoya, custard apple, feijoa, guava, ilama, jaboticaba, longan, lychee, passionfruit, pulasan, rambutan, soursop, Spanish lime, starfruit, sugar apple, and wax jambu. (*Federal Register*, 11/28/12).
- Based on a request by Mitsui Chemicals Agro, Inc., the EPA has approved a rice grain tolerance for the insecticide dinotefuran (Venom®). (*Federal Register*, 11/28/12).
- Based on a request by Dow AgroSciences, the EPA has approved rice grain and bran tolerances for the herbicide fluroxypyr (Cleanwave®). (*Federal Register*, 1/16/13).

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- Based on a request by IR-4, the EPA has approved a pepper (bell and non-bell) tolerance for the insecticide thiacloprid (Calypto®). (*Federal Register*, 2/6/13).

Other Actions

- The EPA is moving to ban the sale of twelve D-Con® mouse and rat poison products produced by Reckitt Benckiser Inc. because these products fail to comply with current EPA safety standards. Approximately 10,000 children a year are accidentally exposed to mouse and rat baits. The EPA has worked cooperatively with companies to ensure that products are both safe to use around children and effective for consumers. Reckitt Benckiser Inc., maker of D-Con® brand products, is the only rodenticide producer that has refused to adopt EPA's safety standards for all of its consumer use products. The agency has worked with a number of companies during the last five years to develop safer rodent control products that are effective, affordable, and widely available to meet the needs of consumers. Examples of products meeting EPA safety standards include Bell Laboratories' Tomcat® products, PM Resources' Assault® brand products and Chemsico's products. The EPA requires rodenticide products for consumer use to be contained in protective tamper-resistant bait stations and prohibits pellets and other bait forms that cannot be secured in bait stations. In addition, the EPA prohibits the sale to residential consumers of products containing brodifacoum, bromadiolone, difethialone, and difenacoum because of their toxicity to wildlife. For companies that have complied with the new standards in 2011, EPA has received no reports of children being exposed to bait contained in bait stations. EPA expects to see a substantial reduction in exposures to children when the D-Con® products that do not comply with current standards are removed from the consumer market as millions of households use these products each year. (EPA Release, 1/30/13).
- The EPA has announced that bystander levels of concern may be exceeded for the insecticide chlorpyrifos (Lorsban®) when remodeled with software designed for fumigant reassessment. Although the majority of chlorpyrifos use is in western states, meteorological data from a number of cities around the nation were modeled with the software. For example, when considering a turf application that would theoretically occur in Bradenton, Florida (at 4 lb a.i./A – the current maximum single application rate) the estimated whole field buffer is approximately 700 feet and a 2,215 foot maximum buffer would be needed to ensure that 95% of the time the air concentration to which bystanders are exposed is not higher than the lung cholinesterase inhibition target concentration. The EPA is accepting comments from those with data addressing bystander exposure on the eRulemaking portal under the docket EPA-HQ-OPP-2008-0850. (*Federal Register*, 2/6/13).
- Senators Pat Roberts (R-Kan.) and Mike Johanns (R-Neb.) have introduced legislation to eliminate a burdensome, costly and redundant Environmental Protection Agency (EPA) permit requirement for applications of pesticides. At issue is the January 2009, Sixth Circuit Court of Appeals opinion in *National Cotton Council*

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v. U.S. Environmental Protection Agency, that requires certain pesticide applications to be permitted under the Clean Water Act. The National Pollutant Discharge Elimination System (NPDES) permit is now in addition to any label requirements or restrictions already placed on the use of a pesticide under the Federal Insecticide, Fungicide and Rodenticide Act (FIFRA). Since early in 2012, the EPA has enforced a now permanent rule in response to the Sixth Circuit Court ruling requiring approximately 35,000 pesticide applicators to get permits to cover about 500,000 applications per year. The EPA estimates determined the permit rule will cost states, local entities and pesticide applicators \$50 million and require one million hours to implement per year. Senator Roberts and Johanns' bill, S. 175, ensures Clean Water Act permits are not needed for the applications of pesticides and amends FIFRA by stating that no permit shall be required for the use of a pesticide that is registered under FIFRA. Roberts introduced the same legislation in the last Congress where it was blocked from consideration on the Senate floor. Also in the 112th Congress, the House and the Senate Agriculture Committee passed similar legislation, H.R. 872, with strong bipartisan support. The bill has the following original cosponsors: Senators Jerry Moran (R-KS), Roy Blunt (R-MO) John Barrasso (R-WY), John Thune (R-SD), Chuck Grassley (R-IA), David Vitter (R-LA), Michael Enzi (R-WY), James Inhofe (R-OK) and John Boozman (R-AR). (*USAgNet*, 1/31/13).

Pesticide Potpourri

- In early February, DuPont received approval for the class action suit brought about by the herbicide aminocyclopyrachlor (Imprelis®). DuPont introduced Imprelis® in 2010 as a new herbicide to control weeds in recreational areas such as golf courses and commercial properties such as sod farms. After customers reported damage to evergreens linked to Imprelis®, the EPA began investigating the herbicide. Numerous lawsuits were filed, and the EPA in August 2011 halted sales of the product. The agency said DuPont submitted more than 7,000 reports of damage or death to such trees as Norway spruce and white pine, as well as test data confirming a link between Imprelis and tree damage. The Wilmington, Delaware-based chemicals company set up its own claims resolution process in September 2011, but customers continued to pursue lawsuits accusing the company of consumer fraud, negligence and product liability, among other claims. Under the settlement agreement, DuPont will pay property owners to remove and replace the damaged trees and cover other losses. Businesses that applied the herbicide to others' property will be compensated for customer site visits and other expenses. The settlement also provides up to \$7 million in attorney's fees and costs for the plaintiffs' lawyers that brought the suits on behalf of customers. DuPont spokesman Gregg Schmidt said in an email that the company's focus has been and continues to be addressing the issues and needs of those affected fairly and accurately. (*Reuters*, 2/12/13).

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- Many pesticide makers are turning their focus to biological products because of tighter regulations and resistance concerns about conventional agrochemicals, and the worldwide bio-pesticides market is growing 10% annually and predicted to triple in size to \$4 billion by 2020. Bayer snapped up U.S. bio-pesticide company AgraQuest last year, giving the group its first bio-pesticide - Serenade® - in the U.K., which is used on potatoes and strawberries. It sees the future as combining these bio-pesticides with mainstream agrochemicals to give the best results for growers. "With the delisting of many products in Europe, we see a market ripe for integrated crop protection using biologicals and chemicals together," said Marcus Meadows-Smith, global head of Biologics at Bayer CropScience. The German group is also awaiting EU clearance for products used in the U.S., such as Sonata® for the control of mildew in soya and corn and Requiem® for controlling white fly, thrips and mites in fruit and vegetables. It also has seed treatments in the pipeline as well as a sclerotinia product for canola. Tighter controls on the use of agrochemicals in Europe has led to some products being delisted, while France is aiming to halve its use of pesticides by 2018, which is encouraging investment in the bio-pesticide industry. After buying AgraQuest

for nearly \$500 million last year, Bayer agreed to purchase smaller German group Prophyta in 2013, and has highlighted its focus on bio-pesticides by saying that half of its CropScience research and development spending will be on bio-pesticides and seeds by 2016, with the other half on agrochemicals. (*Farmers Weekly*, 1/15/13).



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