

# Look What's Out There

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## Herbicides in the Spotlight

### **According to a collaborative study from Wisconsin and Chile, low levels of exposure to an herbicide product lowered fertility in mice.**

The researchers bought an over-the-counter combination of the herbicides 2,4-D, dicamba, and mecoprop plus the unidentified inert ingredients. After mice were exposed through drinking water, there was a subsequent 20 percent increase in failed pregnancies, even at levels below the acceptable level set by EPA.

Some groups are touting this study as clear evidence that herbicides are killing us all. Others will discredit the study and ignore the results. As most of real life, the answer is much more complicated. First of all, the researchers tested a combination of three herbicides and a number of unidentified inert ingredients. It is tempting to blame the herbicide(s) for the effect because they are known to be toxic to plants. However, the inert ingredients may be responsible for the results. Finally, some combination of the herbicides and/or the inerts may have caused the failed pregnancies.

If regulatory action is taken without determining the causal agent(s), the new restrictions may not reduce the risks. Suppose EPA cancels 2,4-D based on this study, but the same inerts continue to be used in a large number of other pesticide products. What if the inert ingredients were the toxic agent in this study? The term "inert" in pesticide jargon means that component is not the ingredient that controls the pest. However, a number of inert ingredients are known to have toxic effects.

This study also reopens the discussion of mice and men. If a chemical causes a toxic effect in mice, should we assume similar results in humans? So far, research has been unable to answer that critical question. Mice are the research animal of choice because of costs and because the physiological systems of mice are well understood. Even so, there are tremendous differences between mice and humans.

Suppose 2,4-D, dicamba, and mecoprop do increase failed pregnancies in humans? What action should we take? It may be prudent to stop selling these products, but the choice is not clear. Gasoline is extremely toxic; even the fumes can cause brain damage. Should we stop using gas? According to FDA, the popular pain reliever acetaminophen is responsible for 2,200 hospitalizations and 100 unintentional deaths each year. No one is calling for a ban on acetaminophen, but stronger warnings are urged. The point is that pesticides are not that different from gasoline or drugs. Each of them has value, but each can pose serious risks if misused.

What should you do? MINIMIZE your exposure to pesticides. ALWAYS wear the protective clothing listed on the pesticide label. NEVER use more pesticide than you need. Dispose of pesticides PROPERLY.

If you want more information about the herbicide study, here is the complete citation. Maria Fernanda Cavieres, James Jaeger and Warren Porter. 2002. Developmental toxicity of a commercial herbicide mixture in mice: effects on embryo implantation and litter size. *Environmental Health Perspectives*. Volume 110, Number 11, p 1081. (PANUPS, 10-11-02)

## Herbicides Review

On September 26, The Industry Task Force II on 2,4-D Research Data released the most recent review of current scientific evidence pertaining to the human health effects of the herbicide 2,4-D. The Task Force commissioned the University of Michigan School of Public Health to examine the current evidence on human toxicity and cancer risks related to the exposure of 2,4-D. After reviewing more than 160 recent toxicologic and epidemiologic studies, the report concluded: "Despite several thorough *in vitro* and *in vivo* animal studies, no experimental evidence exists supporting the theory that 2,4-D or any of its salts and esters damages DNA under physiologic conditions. Studies in rodents demonstrate a lack of oncogenic or carcinogenic effects following lifetime dietary administration of 2,4-D. Epidemiologic studies provide scant evidence that exposure to 2,4-D is associated with soft tissue sarcoma, non-Hodgkin's lymphoma, Hodgkin's disease, or any other cancer. Overall, the available evidence from epidemiologic studies is not adequate to conclude that any form of cancer is causally associated with 2,4-D exposure." The review is published in the current edition of *Critical Reviews in Toxicology*.

Since 1986, more than a dozen government and independent expert panels have concluded that 2,4-D does not pose an unreasonable risk to human health or the environment when used according to label instructions. "The decisions of regulatory agencies and several expert panel reviews simply do not support the allegations that 2,4-D causes cancer or poses an unreasonable risk to human health", stated the Executive Director of the Task Force. "It is unfortunate that those who wish to ban the use of pesticides continue to trade on fear and half truths to advance their interests and confuse the public." (Agnet, 9/26/02).

**Much of the publicity surrounding West Nile virus (WNV) has focused on threats to human health, but many people also worry about their pets.**

According to Dr. Jeff Mahany, assistant Georgia state veterinarian, many mammals and birds may be susceptible to WNV, but very few species develop clinical illness due to infection by the virus. West Nile virus has been reported in horses, humans, birds, a sheep, a goat, a dog, three cats, a llama, an alpaca, a wolf, a skunk, a chipmunk, a domestic rabbit, a few bats and a few squirrels. So far, WNV seems to be a serious threat only for horses, birds, and humans. You still need to protect your pets from mosquito-borne diseases, like heartworms, but WNV does not seem to be dangerous for cats, dogs, and other pets.

You can find more information at these web sites.

<http://www.avma.org/>

<http://www.aphis.usda.gov/oa/wnv/index.html>

<http://www.cdc.gov/ncidod/dvbid/westnile/index.htm>

<http://www.ph.dhr.state.ga.us/epi/vbd/mosquito.shtml>

- **Some types of *Escherichia coli* can be deadly, but a new process developed by USDA-Agricultural Research Service could nearly eliminate the risk of food contamination.**

Engineers with ARS are working on a machine-vision system that can "see" *E. coli*. The system takes three pictures of the fruit through different color filters. Computer analysis of the images can detect fecal contamination, fungi, rot, and other diseases. ARS News Service

Agricultural Research Service, USDA, September 30, 2002

- A parasitic wasp (*Eretmocerus mundus*) found in the Mediterranean region vigorously attacks several species of whitefly including the common pest *Bemisia tabaci*. A Belgian company now markets the "Mundus-System," a product for biocontrol of *Bemisia* spp. Heavy paper cards, that can be hung on plants, are used to introduce the parasitic wasps; each card contains at least 75 pupae which mature and seek out *Bemisia* larvae. The system is said to be well adapted to greenhouse culture as the parasitic wasp thrives under both high and low temperatures and thus is active on early crops right through until season's end. Additionally, *E. mundus* is reported to be resistant to most pesticides and hence well suited to integrated management programs. Information can be found at: <http://www.biobest.be>. (EWSN Newsletter via Agnet).

## Pesticide News

- Based on a request by Monsanto, tolerances were granted for residues of the herbicide glyphosate in or on nongrass animal feed group (400 ppm) and grass forage/fodder/hay (300 ppm). (*Federal Register*, 9/27/02).

- Based on a request by Bayer CropScience, tolerances were granted for residues of the fungicide triticonazole in or on barley grain/hay/straw (0.05 ppm) and wheat grain/straw/forage/hay (0.05 ppm). (*Federal Register*, 9/27/02).

- Based on a request by Plant Products Co., an exemption from the requirement of a tolerance was granted for residues of *Pseudozyma flocculosa* strain PF-A22 UL on all food commodities. This organism is a phyllosphere epiphyte and hyperparasite of powdery mildew. (*Federal Register*, 9/27/02).

- Based on a request by Bayer CropScience, tolerances were granted for residues of the fungicide fenamidone in or on head lettuce (15 ppm) and leaf lettuce (20 ppm). (*Federal Register*, 9/27/02).

- Based on a request by Bayer CropScience, tolerances were granted for residues of the herbicide iodosulfuron-methyl in or on field corn grain/stover/forage (0.03/0.05/0.05 ppm). (*Federal Register*, 9/27/02).

- Based on a request by Dow Agrosciences, tolerances were granted for residues of the herbicide triclopyr and related metabolites in or on fish (3.0 ppm) and shellfish (3.5 ppm). (*Federal Register*, 9/18/02).

- The EPA has announced an intention to modify mitigation measures that were imposed in 1995 on diquat. Specifically, the new regulations allow for a reduction in clothing from double layer to single layer, face shield rather than respirator for mixing and loading, reduction of restricted entry interval (REI) to 24 hours for all worker protection standard (WPS) uses, REI of "when spray is dried" for non-WPS uses, and allowance of a broadcast spray for homeowner and residential uses. (*Federal Register*, 9/18/02).

- The EPA announced that the dietary risk from the use of the potato sprout inhibitor chlorpropham poses no concerns within the limits of the reassessed tolerances associated with use on this commodity. (*Federal Register*, 9/18/02).

- A website has been established for review of the monarch butterfly research that has been done with *Bacillus thuringiensis* protein incorporated corn pollen. The link is: <http://www.ars.usda.gov/sites/monarch/> (UF/IFAS Pest Alert, 10/2/02).

- On October 3, FDACS registered Uniroyal Chemical's Pedestal® (novaluron) insecticide (EPA Reg. # 66222-40-400) for control of whiteflies, thrips, leafminers, armyworms, and certain other foliar feeding insects in container grown ornamentals in greenhouses, shadehouses, and outdoor nurseries. (FDACS PREC Agenda, 11/7/02).