Cooperative Extension --- University of California, Davis

Environmental Toxicology Newsletter

"Published Occasionally at Irregular Intervals"

Arthur L. Craigmill
Extension Toxicologist

Vol. 20 No. 1 -- February 2000

"IN THIS ISSUE"

Public Health Dispatch: Outbreak of *Shigella sonnei* Infections Associated with Eating a Nationally Distributed Dip -- California, Oregon, and Washington, January 2000

A multistate outbreak of *Shigella sonnei* infections with at least 30 culture-confirmed cases in California, Oregon, and Washington has been linked to eating a nationally distributed five-layer dip. Symptom onsets occurred during January 10-23, 2000; case-finding is ongoing. The implicated product is manufactured by Señor Felix's Mexican Foods* (Baldwin Park, California) and distributed under the brand names Señor Felix's 5-Layer Party Dip (sold in 16-ounce, 20-ounce, and 41-ounce containers), Delicioso 5-Layer Party Dip (33-ounce containers), and Trader Joe's 5-Layer Party Dip (20-ounce containers). The dip consists of layers of beans, salsa, guacamole, nacho cheese, and sour cream.

On January 21, the company voluntarily recalled the products. The recall applies to all products prepared without preservatives and that have an expiration date of February 9 or earlier, and all products prepared with preservatives and that have an expiration date of March 4 or earlier. Consumers who have these products should avoid eating them and

should return them to their place of purchase.

S. sonnei infection can cause abdominal cramps, fever, and bloody diarrhea. Symptoms usually develop 1-3 days after eating contaminated food. Many cases resolve without medical attention, but persons with severe infections may benefit from antibiotic treatment. General information on *Shigella* infection is available at http://www.cdc.gov/ncidod/dbmd/diseaseinfo/shigellosis_g.htm.

* Use of trade names and commercial sources is for identification only and does not constitute endorsement by CDC or the U.S. Department of Health and Human Services.

REF: *Morbidity and Mortality Weekly Report*, 49(03), January 28, 2000.

Carbon Monoxide Poisoning Associated with Use of LPG-Powered (Propane) Forklifts in Industrial Settings -- Iowa, 1998

In 1998, the Iowa Department of Public Health (IDPH) and Iowa State University (ISU) Extension Department, with the assistance of local health departments, investigated a series of carbon monoxide (CO) poisonings associated with the use of liquified petroleum gas (LPG)-powered forklifts in light industry. In each episode, forklifts emitting high CO concentration levels were operated in inadequately ventilated warehouse and production facilities, which resulted in high CO accumulations. Employees at each site developed symptoms of CO poisoning, and some employees received inadequate or inappropriate medical care. Symptoms of CO poisoning are headache, and at least one of the following: weakness, dizziness, or nausea.

Incident 1: On August 17 and 18, 1998, during three consecutive 8-hour shifts, 34 (45%) of 75 plastic manufacturing plant employees experienced symptoms of CO poisoning (primarily headaches) while at work. When measured by investigators, the plant's two forklifts each emitted concentrations of CO in excess of 40,000 ppm (recommended guidelines range from 2000 to 10,000 ppm). On August 17, the plant's air-conditioning system had been shut down for servicing, and an exhaust fan had malfunctioned, reducing the effective ventilation rate. However, the forklifts emitted such excessive amounts of CO that no practical level of ventilation could have maintained CO concentrations below recommended exposure limits. (CDC's National Institute for Occupational Safety and Health recommends that CO exposure not exceed 35 ppm as an 8-hour time-weighted average and that point exposure should never exceed 200 ppm.)

Incident 2: In November 1998, after experiencing headaches, nausea, and dizziness over several days, employees of a warehouse brought conventional residential CO detectors to work; these detectors registered CO concentrations of 30-136 ppm. In the adjacent office area, concentrations as high as 76 ppm were recorded before employees inactivated the detectors to silence the continuous alarms. Employing industrial CO detectors, the investigation by IDPH

determined that the facility's LPG-powered forklifts (producing from 40,000 to 70,000 ppm of CO) and inadequate plant ventilation allowed accumulations of CO up to 267 ppm in the warehouse. No employees reported seeking medical treatment.

Incident 3: From December 1998 through January 5, 1999, employees of an embroidery company experienced headaches and fatigue, and an employee's puppy became somnolent when brought to work. A local energy company was called to investigate. The company measured CO concentrations of 100-200 ppm in the embroidery offices. While attempting to find the source of CO, investigators found levels of 200-450 ppm in a wooden pallet manufacturer located in the same building one floor below the embroidery offices.

In the subsequent investigation, 23 workers were interviewed; two (29%) of seven embroidery employees and four (25%) of 16 pallet company employees had illnesses that met the case definition for CO poisoning. Investigators found an association between illness and proximity of the person's work station to areas where the forklifts were operated. The pallet manufacturer's forklifts emitted up to 75,000 ppm of CO into the inadequately ventilated warehouse. The embroidery office's furnace was vented properly with satisfactory combustion. However, the furnace was in the warehouse of the pallet company and pulled high CO-content ambient air from the warehouse into the heating system and distributed it to the embroidery office.

Editorial Note: CO poisoning associated with indoor combustion sources has long been recognized but continues to be a problem in the United States. The events described in this report illustrate factors that result in failure to adequately prevent CO poisoning and to promptly recognize such incidents when they occur. Timely and correct clinical diagnosis of acute CO poisoning remains elusive because of the nonspecific and protean nature of its signs and symptoms (i.e., headache, nausea, lethargy, weakness, abdominal discomfort/pain, confusion, dizziness, visual disturbances [including blurred vision], numbness and tingling, ataxia, irritability, agitation, chest pain, dyspnea on exertion, palpitations, seizures, and loss of consciousness).

REF: *Morbidity and Mortality Weekly Report*, 48(49) December 17, 1999.

Tobacco Use Among Middle and High School Students -- United States, 1999

The prevalence of cigarette smoking nationwide among high school students increased during the 1990s; more than 80% of current adult tobacco users started smoking cigarettes before age 18 years. To determine the prevalence of cigarette, smokeless tobacco (i.e., chewing tobacco and snuff), cigar, pipe, bidi (an herbal leaf hand-rolled with shredded tobacco) and kretek (clove flavored cigarettes) use among middle school and high school students nationwide, the American Legacy Foundation, in collaboration with the CDC Foundation, conducted the National Youth Tobacco Survey (NYTS) during the fall of 1999. This report summarizes data from the NYTS on current use of tobacco products, which indicate that 12.8% of middle school students and 34.8% of high school students use any type of tobacco; that the low prevalence of current cigarette smoking observed among black high school students throughout the 1990s is not found among middle school students; and that the percentages of high school students who currently use bidis and kreteks (two new forms of tobacco in the United States) are almost as high as the proportion who use smokeless tobacco.

Middle School Students

Among middle school (grades 6-8) students, the overall prevalence of any current tobacco use was 12.8%. Cigarettes (9.2%) were the most prevalent type of tobacco used, followed by cigars (6.1%). Cigarette smoking rates were similar

among boys and girls and among racial/ethnic groups. Boys were significantly more likely than girls to use smokeless tobacco (4.2% and 1.3%, respectively), smoke cigars (7.8% and 4.4%, respectively), and smoke tobacco in a pipe (3.5% and 1.4%, respectively). Black students were significantly more likely than white students to smoke cigars (8.8% and 4.9%, respectively).

High School Students

Among high school (grades 9-12) students, the overall prevalence of any current tobacco use was 34.8%. Cigarettes (28.4%) were the most prevalent type of tobacco used, followed by cigars (15.3%). Boys were significantly more likely than girls to use smokeless tobacco (11.6% and 1.5%, respectively), smoke cigars (20.3% and 10.2%, respectively), smoke tobacco in a pipe (4.2% and 1.4%, respectively), and smoke bidis (6.1% and 3.8%, respectively). White and Hispanic students were significantly more likely than black students to smoke cigarettes (32.8%, 25.8%, and 15.8%, respectively). White students were significantly more likely than black and Hispanic students to use smokeless tobacco (8.7%, 2.4%, and 3.6%, respectively).

Editorial Note: This report is the first to measure the prevalence of current tobacco use among a nationally representative sample of middle school students and the first to report the prevalence of current bidi and kretek use among a nationally representative sample of middle and high school students. Although previous national surveys have shown that cigarette smoking rates among black high school students have been increasing, black students still were smoking at much lower rates than other high school students. However, the findings in this report indicate that current cigarette smoking prevalence among middle school black students was similar to rates among white and Hispanic students and that current cigar use prevalence among middle school black students was significantly higher than among white students. Future surveys should evaluate whether the rate of increase in smoking rates among black students has accelerated and whether the difference in smoking rates between black and white high school students are disappearing. In addition, more research is needed to determine whether black youth are finding smoking appealing and socially acceptable.

Current use of novel tobacco products, such as bidis and kreteks, is an emerging public health problem among U.S. youth. Cigarettes remain the most widely used tobacco product by youth; however, recent trends underscore the importance of monitoring the rates at which youth adopt other tobacco products. The social and cultural factors related to differing patterns of tobacco product use across sex and racial/ethnic groups require additional study.

The findings in this report are subject to at least two limitations. First, these data apply only to youth who attended middle or high school and are not representative of all persons in this age group. Few persons aged less than 16 years do not attend school and, in 1997, only 4% of 16-year-olds and 6% of 17-year-olds who had not completed high school were not enrolled in a high school program. The dropout rate for young adults aged 16-24 years varies greatly by race/ethnicity (7.6%, white; 13.4%, black; and 25.3%, Hispanic). Second, "any current tobacco use" might be underestimated in this report because it does not include a measure of "roll-your-own" tobacco smoking.

If current patterns of smoking behavior persist, an estimated 5 million U.S. persons who were aged less than or equal to 18 years in 1995 could die prematurely from smoking-related illnesses. CDC has prepared "Best Practices" guidelines to help states determine funding priorities and to plan and carry out effective comprehensive tobacco-use prevention and control programs. Implementation of the "Best Practices" guidelines, along with nationwide prevention efforts, enforcement of the proposed Food and Drug Administration rules, increases in the excise tax on tobacco products, and increased availability of smoking cessation treatment options, could dramatically reduce these projected deaths.

REF: *Morbidity and Mortality Weekly Report*, 49(03), January 28, 2000.

Not in My Backyard? Are you a Potent Source of Pollution?

A recent paper titled " Emissions of Polychlorinated Dibenzo-p-dioxins and Polychlorinated Dibenzofurans from the Open Burning of Household Waste in Barrels", by Lemieux et al., published in *Environ Sci & Technol,* 34(3), 377-384, Feb 2000, has shown that backyard trash burning may be a significant source of uncontrolled polychlorinated dibenzodioxin (PCDD) and polychlorinated dibenzofuran (PCDF) production and emission.

This research was done at the federal Environmental Protection Agency's Open Burning Test Facility using 55 gallon burn drums, and two sets of trash made to represent trash which might come from a recycling and a non-recycling family.

PCDF formation for different test burns. Four test burns were done using amounts of trash from 6.4 to 13.6 kg and the amount burned was 46.6% to 68.1% of the total. The emissions of PCDDs/PCDFs ranged between 0.0046 and 0.48 mg/kg of trash burned. The emissions of PCDDs/PCDFs seemed to correlate with both copper and hydrochloric acid emissions. When the amount emitted by backyard burning was compared with that from municipal waste combustors (MWCs) which are equipped with high-efficiency flue gas cleaning technologies, it was predicted that from 2-40 households burning their trash daily in barrels could produce PCDD/PCDF emissions similar to those produced by burning 182,000 kg/day (200 ton/day) at a MWC facility.

An estimated 20 million people in rural areas burn trash in their backyards.

Elevated Blood Lead Levels Among Internationally Adopted Children United States, 1998

Lead poisoning has been reported recently among Chinese children adopted by U.S. citizens. However, little is known about the prevalence of elevated blood lead levels (BLLs) among adoptees from China and other countries. Persistent sources of lead exposure outside the United States include leaded gasoline exhaust; industrial emissions; cottage industries (e.g., battery breaking and recycling plants); traditional medicines; and some cosmetics, ceramic ware, and foods. In 1998, approximately 15,000 orphans from countries outside the United States who were adopted abroad or were to be adopted in the United States by U.S. citizens were issued U.S. immigrant visas--a nearly two-fold increase over 1988. Some orphans have been abandoned for extended periods and have no obtainable medical history. Immigrants aged less than 15 years are not required to have serologic or blood tests either in their country of origin or on entry into the United States unless exposure to syphilis or human immunodeficiency virus is suspected. To obtain reports on the prevalence of elevated BLLs (greater than or equal to 10 micrograms/dL) among international adoptees, CDC contacted 12 international adoption medical specialists identified through the Joint Council on International Childrens Services and two collaborating medical specialists. This report summarizes the results of that investigation, which suggest that international adoptees may arrive in the United States with elevated BLLs.

Of the 14 reporting sites contacted, nine had data on blood lead tests among adopted children who immigrated during 1991-1999. The data represented seven clinical practices where blood lead tests were conducted by venipuncture (five of which tested all international adoptees for BLLs) and two surveys by pediatric providers. Data were included if at least 25 children were tested from a specified country or region.

The prevalences of elevated BLLs ranged from 1% to 13% among Chinese adopted children and from 1% to 5% among Russian adopted children. In six of the nine reports on Chinese children and four of the six reports on Russian children, 70% or more of the children were tested for elevated BLLs within 4 weeks of arrival to the United States. Among 223 Chinese children surveyed by one site, the prevalence of elevated BLLs was 2.3 times higher (18%) among children tested within 4 weeks of arrival in the United States than among children tested after 4 weeks (8%). Limited data were available on the prevalence of elevated BLLs among adopted children from other countries of origin.

Editorial Note:

Most of the reported prevalences of elevated BLLs among Chinese adoptees were higher than the prevalence among U.S. children. Among U.S. children aged 1-2, 3-5, and 6-11 years, the prevalence of elevated BLLs during 1991-1994 was 6%, 4%, and 2%, respectively. For some adopted children, blood lead testing occurred soon after arrival to the United States, suggesting that exposure occurred before emigration. The lower prevalence of elevated BLLs among Chinese children tested later than 4 weeks after arrival than among those tested within 4 weeks of arrival further indicates that, for many of these children, elevated BLLs probably developed before they arrived in the United States.

Data are limited on the prevalence of elevated BLLs among children living in China. Among selected populations of children aged 1-6 years living in China, prevalences of elevated BLLs of up to 38% have been reported. Among Russian school-aged children, prevalences of elevated BLLs of up to 58% have been reported in one city. The lower prevalence of elevated BLLs among children who have emigrated from China and Russia compared with levels among children residing in China and Russia may be related to variations in lead exposure by region of country or to the expected decline in BLLs over time once children have arrived in the United States and are no longer exposed to sources of lead.

In this report, most of the children screened by the international adoption clinics were from Russia or China. Similarly, of all U.S. immigrant visas issued to orphans in 1998, most (55%) were issued to children from Russia and China. Because most children immigrating as adoptees are not screened by the international adoption medical specialist clinics in this report, selection bias may affect this sample.

The American Academy of Pediatrics recommends that children who have been adopted or emigrated from countries where lead poisoning is prevalent should be screened for elevated BLLs. CDC recommends that young children at high risk for lead exposure be screened with a blood lead test. Accordingly, international adoptees from countries where lead poisoning is prevalent should receive a blood lead test after arrival in the United States. Some adopted children have had high enough levels to warrant chelation therapy (greater than or equal to 45 micrograms/dL). Children with elevated BLLs should receive follow-up medical attention that adheres to CDC guidelines and state and local policies and laws, and their families should receive information on the prevention of lead poisoning. For children with BLLs high enough to warrant source investigation, investigators should consider that lead exposure may have occurred before arrival in the United States in addition to considering sources of lead exposure in the current environment.

REF: *Morbidity and Mortality Weekly Report* - February 11, 2000 / 49(05):97-100.

DPR Releases Pesticide Illness Data

SACRAMENTO -- The California Department of Pesticide Regulation (DPR) today (02/15/2000) released statewide pesticide illness data for 1997 and 1998.

The 1997 illness report data showed 1,319 potential or confirmed cases of pesticide illness, down 16.5% from 1996. The decline continued in 1998, with 998 potential or confirmed pesticide illnesses reported. In both years, more than

half of the reported illnesses occurred in non-agricultural settings.

A DPR staff analysis found no specific factors to account for the decline. Statistics from the Pesticide Illness Surveillance Program vary from year to year, but field worker illnesses have trended downward since the 1980s.

Illness report data for 1997 and 1998 were finalized after DPR upgraded computer programs to organize the data. The new system provides more reporting details on occupation, exposure circumstances, and equipment involved in accidents. The new system also records more specific information on pesticide products and uses. ("Pesticide" is a general term for substances that kill or control pests. Pesticides include insecticides, herbicides, rodenticides, disinfectants, and sanitizers.)

In 1997, some 774 illnesses (about 59%) resulted from non-agricultural applications, while 545 reports involved agricultural settings. In 1998, some 632 illnesses (63%) were non-agricultural, while 366 cases involved agricultural pesticides.

Under state law, county agricultural commissioners act as local enforcement agents for pesticide laws and regulations. They investigate all pesticide-related illnesses or injuries reported in their counties. DPR specialists then analyze each case to determine if pesticide exposure played a role in an illness.

State law also requires physicians to report to local health officers any illness that may be related to pesticide exposure. Such direct illness reporting allows DPR to investigate cases promptly. Absent physician reports, DPR identifies possible illnesses through physician reports to the worker compensation program, although such reports typically are more than a month old.

DPR began an education and outreach program for physicians in 1994. Only 16% of the illnesses investigated that year came through physician reporting. Since then, physician reporting has increased. DPR received physician reports for 30% of the cases investigated in 1997.

DPR's illness report data helps identify trends, guide enforcement activities, and when appropriate, fine-tune safety rules. For example, the Department has made pesticide drift incidents a priority, based on illness data collected in recent years. In 1997, DPR issued a Pesticide Drift Enforcement Policy to better define drift and summarize regulatory standards. Elements of this policy will be codified in regulations under development and expected to be noticed later this year.

In 1998, DPR took action against illegal sales of insecticidal chalk after a child became ill from eating chalk. In addition to a public awareness campaign, DPR conducted 31 retailer inspections in a five-month period and issued 19 violation notices for sales of the product. DPR also urged the U.S. Environmental Protection Agency to begin a nationwide crackdown on illegal sales of insecticidal chalk.

California's Pesticide Illness Surveillance Program is generally acknowledged as the nation's best. Data generated from illness reports has made DPR's worker protection program a model for other states. The program does not attempt to track every pesticide-related incident, since unreported illnesses cannot be documented.

For synopses of the 1997 and 1998 data, and a brochure describing the illness surveillance program, contact DPR's Worker Health and Safety Branch, 830 K Street, Sacramento CA, 95814-3510; phone (916) 445-4222. The material can also be accessed from the publications section of DPR's Web site www.cdpr.ca.gov.

For a breakdown of illness statistics by county, please see this press release on DPR's Web site http://www.cdpr.ca.gov/docs/pressrls/illness.htm or call 916/445-3974 for a fax copy.

REF: Press Release, California Department of Pesticide Regulation, February 15, 2000.

Toxicology Tidbits

Pesticide Exposure and Children

Part 1: Why Focus on Kids?

This article on pesticide exposure is in the February issue of *Agrichemical & Environmental News* and contains information on children's exposure to flea bombs, environmental hazards, and susceptibility to certain environmental hazards.

Link: http://www2.tricity.wsu.edu/aenews

Are Bioengineered Foods Safe?

Since 1994, a growing number of foods developed using the tools of the science of biotechnology have come onto both the domestic and international markets. With these products has come controversy, primarily in Europe where some question whether these foods are as safe as foods that have been developed using the more conventional approach of hybridization.

Ever since the latter part of the 19th century, when Gregor Mendel discovered that characteristics in pea plants could be inherited, scientists have been improving plants by changing their genetic makeup. Typically, this was done through hybridization in which two related plants were cross-fertilized and the resulting offspring had characteristics of both parent plants. Breeders then selected and reproduced the offspring that had the desired traits.

To read this entire article, link to: http://www.fda.gov/fdac/default.htm

Hijiki Seaweed

The Canadian Food Inspection Agency and Health Canada are warning consumers to limit their consumption of hijiki seaweed because tests have shown the product contains **higher levels of inorganic arsenic than other types of seaweed.** Health Canada began investigating seaweed after a physician in the Atlantic provinces advised health officials that two patients who were of macro nutrient diets that included a lot of seaweed had high arsenic levels. Inspectors then checked 20 types of seaweed in health food stores and found three samples with high arsenic levels. As

a result, Health Canada issued its advisory and is doing additional research into the presence of arsenic in seaweed.

REF: *Food Chemical News*, 41(51), Feb 7, 2000.

Pet Chews May Cause Illness in People, Agency Warns

Based on a number of reports of human illnesses in Canada, FDA recently warned U.S. consumers about the potential risk from contact with dog chew products made from pork or beef.

According to FDA, dog chew products, including **pig ears, beef jerky treats, smoked hooves, and pig skins, may pose a risk of bacterial infection, such as *Salmonella infantis*.** In normally healthy people, these infections can cause flu-like symptoms (nausea, vomiting, abdominal pain, and diarrhea, for example), but in those with weakened immune systems the infection can be more serious--even life-threatening.

FDA is urging pet owners to wash their hands with hot water and soap after coming into contact with these pet chews. Elderly people, young children, and those with weakened immune systems should avoid contact with the treats altogether.

FDA is working with other U.S. and Canadian health officials and has issued an import bulletin on products that have been directly linked to illnesses. Also, the agency is examining the manufacturing processes for products containing pig ears to determine how this product and similar ones can be made safely.

REF: *FDA Consumer*, 34(1), January-February 2000.

Don't mix herbs and standard drugs

Users of prescription drugs and alternative remedies could place themselves at risk if they don't tell their doctors they are combining these substances, say researchers from George Washington University and the National Institutes of Health. One in every five prescription drug users also takes alternative medicines, setting the stage for potentially serious drug interactions. **Little is known to date about herb-drug, herb-herb, and nutrient-drug interactions**. Consumers should discuss these medications and combinations with their doctors. (Psychosomatic Medicine, September 1999)

REF: *FDA Consumer*, 34(1), January-February 2000.

"Micro" Managing Your Ovens

Ever wonder how safe microwave ovens are and how best to use them? Or how microwaves work their magic in heating food? FDA's Center for Devices and Radiological Health explains this and more at www.fda.gov/cdrh/consumer/microwave.html. Learn about FDA's standard that limits the quantity of microwaves that can leak from an oven throughout its lifetime. The site also has other tips, such as a warning that commercial microwave testing devices are generally inaccurate and unreliable.

REF: *FDA Consumer*, 34(1), January-February 2000.

Mad Cow Disease

A new lab experiment has provided support to the hypothesis that the human form of mad cow disease in Europe was caused by people eating meat from infected cattle, according to the *Washington Post*. The new study, which was conducted by researchers at the University of California, San Francisco, and was published in the Dec. 21 *Proceedings of the National Academy of Sciences*, removes doubt that such a link between the human and cattle disease existed. New variant Creutzfeldt-Jakob disease, the human form of bovine spongiform encephalopathy, has killed 51 people in Europe. The brain disease has not been found in cattle or humans in the U.S. The study also suggests that the infectious protein that causes the disease (a prion) can move between species more easily than was previously believed.

REF: *Food Chemical News*, 41(45), December 27, 1999.

Swiss Scientists Decode Protein Linked to CJD

Swiss scientists said yesterday they had decoded the three-dimensional structure of the human prion protein, moving **one step closer to unraveling the cause of the deadly new variant Creutzfeldt-Jakob Disease**, according to a Reuters report.

Prions appear naturally in the brain. But experts say these proteins can mutate into dangerous forms, which are linked to diseases such as bovine spongiform encephalopathy — also known as BSE or mad cow disease — and nvCJD (New Variant Creutzfeldt-Jakob Disease), its human form. These diseases cause the brain to waste away and are always fatal. The discovery by researchers at the Institute for Molecular Biology and Biophysics at the Swiss Federal Institute of Technology in Zurich, led by Professor Kurt Wuethrich, could shed light on how rogue prions operate.

REF: *Food Chemical News Daily*, 2(130), January 5, 2000.

A Tale of Two Pathogens; *Salmonella enteritidis* and *Salmonella Pullorum*

The January 7 issue of *Science* contained an article titled "Tracing the Origins of *Salmonella* Outbreaks" based on some epidemiological work done at Texas A&M University. The article looked at data on human foodborne illness due to *S. enteritidis*, and also data on *S. pullorum*, which has been eradicated from domestic fowl. The authors noted that the emergence of human *S. enteritidis* infections increased as the rate of flock infections by *S. pullorum* decreased. The authors postulated that poultry which had become immune to *S. pullorum*, had increased immunity to *S. enteritidis*. When *S. pullorum* was eradicated, *S. enteritidis*, which does not cause disease in poultry and which is carried by rodents, filled the niche left by the poultry pathogens, and the subsequent increase in human infections. The authors also suggest that one way to control this source of human foodborne illness, is to reestablish flock immunity using vaccination programs.

Unfortunately, this study has already been misrepresented. A usually reliable source of information about animal drugs (*Food Chemical News*) reported the study in this way: "*Salmonella Enteritidis* Infections May Have Flourished Due to Antibiotics Use in Poultry ." In fact, antibiotic use in poultry is not even mentioned in this paper. The article was not about antibiotic resistance, it was about the effect of a poultry disease eradication having an unexpected effect on human foodborne illness.

Salmonella-related illness from eggs

The number of ***Salmonella*-related illness from eggs has dropped by 39% since 1996**, according to the Centers for Disease Control and Prevention (CDC). *Salmonella enteritidis* dropped to 2.2 per 100,000 people in 1998 from 3.6 per

100,000 two years earlier. CDC credits on-farm control programs, increased refrigeration and the public education in spurring the decrease. FDA and USDA are currently working on implementation of a program aimed to reduce *Se*-related illness 50% by 2005 and eliminate them by 2010.

REF: *Food Chemical News*, 41(51), Feb 7, 2000.

Girls' Bone Health Helped by Vitamin D Supplementation in Infancy

Girls given vitamin D supplementation in infancy have increased bone density at eight years of age, according to research published in the December 1999 issue of *The Journal of Clinical Endocrinology & Metabolism*. "If this positive influence was maintained later in life," said lead researcher Samuel Zamora, "primary prevention in the pediatric population would need serious consideration. Thus, a possible beneficial effect of early vitamin D supplementation on bone mineral mass and density at specific skeletal sites deserves further investigation in prospective controlled studies." The University of Geneva, Switzerland, study involved 106 girls who were breast-fed as infants. Zamora said the bone mineral density of the 91 girls who received calcium supplements was significantly higher at three specific skeletal points than of the 15 girls who did not. Zamora noted that the requirement of vitamin D for breast-fed infants remains controversial. The American Academy of Pediatrics committee on nutrition recommends vitamin D supplementation for breast-fed infants only when the mother's vitamin D nutrition has been inadequate or if the infant does not benefit from adequate UV light exposure.

REF: *Food Chemical News Daily*, 2(132) January 7, 2000.

Cross-pollination of genetically engineered plants

A study done at the University of Maine's Cooperative Extension farm showed that there was **little cross-pollination between genetically engineered plants and a group of traditional crops grown close to one another and no cross-pollination when the two types of plants were grown farther apart.** The study showed cross-pollination at a rate of 1% in the first six rows of corn when hybrid corn was grown 100 feet downwind of genetically mofidied corn. The rate of cross-pollination decreased the farther away the crops were planted. At a distance of 1,000 feet away, there was no cross-pollination.

REF: *Food Chemical News*, 41(51), Feb 7, 2000.

2,4-D and Cancer in Dogs

A research report recently published in the peer-reviewed, scientific journal *Veterinary and Human Toxicology* (41(2), 1999) raises some very troubling questions about an earlier National Cancer Institute (NCI) study on the use of the herbicide 2,4-D and the incidence of canine malignant lymphoma (CML), a form of cancer peculiar to dogs. The NCI study published in the *Journal of the National Cancer Institute* (Hayes et al., 83:1226-31, 1991) purportedly showed not only a significant association between the use of 2,4-D on lawns and the incidence of CML among pet or companion dogs, but a significant dose response as well. In other words, the more often you treat your lawn with 2,4-D, according to the NCI study, the higher the risk of cancer to your dog.

These findings are contrary to the extensive toxicology of 2,4-D animal feeding studies conducted under EPA/Good Laboratory Practices. Nevertheless, the NCI study received extensive coverage in the media, being carried by all major news services and brought renewed cries from advocacy groups for banning 2,4-D.

For more info see the article titled: *NCI's 2,4-D Studies -- Are Your Tax Dollars Funding Biased Advocacy*? http://www2.tricity.wsu.edu/

REF: *Agrichemical and Environmental News*, Issue No. 165, January 2000.

The Chlorpyrifos Risk Assessment
Part 2: The Rugrat Rant

In the chlorpyrifos risk assessment, EPA cited several studies in the scientific literature that indicated suckling rats are indeed at least several times more susceptible to the acute effects of chlorpyrifos. The key word here is acute; the studies cited were testing either lethal doses or maximum tolerated doses (MTDs). While outright death was not observed at MTDs, and weight did not decrease by more than 10%, there is no doubt that brain AChE was significantly inhibited. In some studies, nonlethal but telltale signs of poisoning had occurred -- tearing, salivation, and tremors-indicating that MTDs are still quite toxic. Many studies administered doses by subcutaneous (under the skin) or intraperitoneal (into the abdomen) injection. Such unconventional exposure routes expose an organism to a very large dose all at once, bypassing the protective layer of the skin or the much slower absorption into the bloodstream from the intestine.

For more info: http://www2.tricity.wsu.edu/

REF: *Agrichemical and Environmental News*, Issue No. 165, January 2000.

The Chlorpyrifos Risk Assessment
Part 3: Ecorisk--Guilt by Omission?

You would think the Environmental Protection Agency (EPA) would have its hands full trying to implement the Food Quality Protection Act (FQPA) proviso to protect kids without having to worry about dead birds and fish. However, one of the secrets of the FQPA was the hidden mandate to examine ecological risk of all pesticides.

The FQPA required all product tolerances to be reassessed by the year 2006 for registration renewal. The tolerance reassessment process results in a document known as the Reregistration Eligibility Decision Document (RED). Within the RED, two elements are cobbled together: a human-health risk assessment conducted by EPA's Health Effects Division (HED) and an ecological risk assessment penned by EPA's Ecological Fate and Effects Division (EFED).

The HED documents have grabbed all the attention as EPA has dribbled out drafts onto its website, but the EFED reports are overall the most troubling for organophosphorus insecticides (OPs). While the HED analyses are tending to show less and less risk to humans as real world data are used to refine the acute and chronic dietary exposure assessments, the estimated ecological risks of OPs reported by EFED are almost without exception exceeding EPA's levels of concern (LOCs).

For more info: http://www2.tricity.wsu.edu/

REF: *Agrichemical and Environmental News*, Issue No. 166, February 2000.

Senator Calls for Immediate Action on Pesticides in Schools

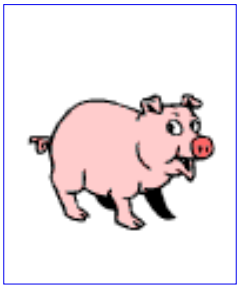
Sen. Joseph Lieberman (D-Conn.) today called on the Environmental Protection Agency to take immediate action to address the use of pesticides in U.S. schools. Lieberman said the EPA should start by providing guidance to pest control companies and school officials on the relative risks of different application methods, and establishing uniform guidelines for parental and educator notification before pesticides are used on school grounds.

Lieberman urged the agency to take these steps at a press conference held to announce the results of a U.S. General Accounting Office study which found that there is a paucity of information concerning pesticide use in schools and the subsequent risks to children. The GAO report found that 329 of 2,300 pesticide exposure cases reported between 1993 and 1996 in U.S. schools required medical attention. Of those 2,300 cases, authorities had no follow-up information for 40% of them.

In addition to sending a letter to EPA Administrator Carol Browner asking for immediate action, Lieberman announced he would co-sponsor legislation introduced by Sen. Robert Torricelli (D-NJ) which would require that the safest pest control methods available be used in school buildings and on school grounds. Lieberman said he was optimistic the legislation could pass, "if not this year, then the next."

REF: *Food Chemical News Daily*, 2(129) January 4, 2000.

!! Click on the pig !!



Back to the Beginning