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~ Dr. Arthur L. Craigmill ~
Extension Toxicologist

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REPTILE-ASSOCIATED SALMONELLOSIS

During 1998-2002, the Centers for Disease Control and Prevention (CDC) received reports from state health departments regarding *Salmonella* infections in persons who had contact with reptiles (e.g., lizards, snakes, and turtles). *Salmonella* infections usually cause gastroenteritis but can result in invasive illness (e.g., septicemia and meningitis), especially in infants and immunocompromised persons. For decades, reptiles have been known as a source for salmonellosis; however, numerous reptile owners remain unaware that reptile contact places them and other household members, including children, at greater risk for salmonellosis. Increasing evidence suggests that amphibians (e.g., frogs, toads, newts, and salamanders) also can pose risks for salmonellosis in humans. This report describes cases of reptile-associated salmonellosis in six states*, offers recommendations on preventing transmission of *Salmonella* from reptiles

and amphibians to humans, and provides an update on state regulations mandating education at pet stores about salmonellosis.

*(California, Connecticut, Florida, North Dakota, Ohio and Wisconsin. At least six other states (Kansas, Maine, Maryland, Oklahoma, Washington, and Wyoming) reported similar cases.)

CASE REPORTS

California. During December 2001, an infant aged 3 months was taken to an emergency department (ED) after 1 day of bloody diarrhea and fever. The infant was sent home with no therapy and recovered in 2 days; a stool specimen yielded *Salmonella* serotype Nima. Although no reptiles lived in the home, the infant's father was a high school biology teacher who handled reptiles in the classroom, including a large snake (i.e., a boa) that he often draped over his shoulders. A stool culture from the snake grew *S.* Nima. When interviewed, the father indicated that he knew reptiles carry *Salmonella* and was careful to wash his hands after handling them or their containers. However, he did not change clothing when he came home from work before holding his child.

Connecticut. During June 2002, a child aged 21 months was admitted to a hospital with fever, abdominal cramps, and bloody diarrhea. The child received no antibiotic therapy and was discharged the next day. Blood and stool cultures yielded *Salmonella* serotype Poona. A sibling aged 6 years also had fever and bloody diarrhea and a stool culture that yielded *S.* Poona. The family had purchased an iguana approximately 1 month earlier. The children had cleaned the iguana's cage and handled the iguana 2 days before their illness onsets. A stool culture from the iguana grew *S.* Poona.

Florida. During January 2000, an infant aged 1 month visited a clinic with fever and diarrhea; the infant was not hospitalized. A stool specimen yielded *Salmonella* serotype Tennessee. One week before illness onset, the infant's family moved into a household that contained a bearded dragon (i.e., *Pogona vitticeps*). The pet reptile's cage had been washed in the kitchen near the infant's bottle nipples. A stool culture from the bearded dragon yielded *S.* Tennessee. An adult in the house reported being aware that turtles and iguanas are reservoirs for *Salmonella* but unaware that all reptiles can carry *Salmonella*. The bearded dragon was placed outside the home and later donated to a zoo.

North Dakota. During March 1998, twin infants aged 2 weeks were admitted to a hospital after 1 day of poor feeding, diarrhea, and fever. They were treated intravenously with ampicillin for 6 days. The infants' mother and a child aged 3 years in the home also had diarrhea. Stool specimens from one of the twins, the mother, and the older child yielded *Salmonella* with the partial serotype O group 44, 45, 47, 48, or 50, H antigen G complex. The family recently had acquired an iguana, which was not allowed out of its cage. Only the mother handled the reptile and cleaned the cage. When the family learned that the iguana was the probable source of *Salmonella* infections, the iguana was euthanized. Culture of intestinal contents from the iguana yielded *Salmonella* with the same partial serotype as the patients' isolates.

Ohio. During August-October 2000, local health departments reported seven gastrointestinal illnesses associated with iguanas or turtles acquired at county fairs. In one incident, two siblings aged 11 and 13 years with diarrhea and abdominal cramping visited an ED. No stool specimens were collected from the children. However, stool specimens from a turtle that the siblings received at a county fair yielded *Salmonella* serotype Sandiego. During the same period, a stool specimen from a man aged 20 years with diarrhea also yielded *S.* Sandiego; he recently had won a turtle at a county fair.

Wisconsin. During November 2002, an infant aged 24 days was admitted to a hospital after 1 day of bloody diarrhea. The infant was hospitalized for 3 days and received intravenous fluids and supportive care. A stool culture yielded *Salmonella* serotype IV 44:z4z23:-. The infant was treated for 14 days with oral amoxicillin. An iguana was reported living in the home of the infant's father; however, attempts to collect stool samples from the iguana were unsuccessful.

Two weeks later, an infant aged 4 months in a neighboring county visited a hospital after 8 days of fever of 100.3° F (37.9° C) and 3 days of decreased range of motion in the left hip. *Salmonella* serotype IV 44:z4z23:- was isolated from both left hip aspirate and blood cultures. The infant was hospitalized for 6 days and treated intravenously with cefotaxime and gentamicin. An iguana was reported living in the infant's home, but the reptile was removed before it

could be tested. Both iguanas associated with the infants were traced back by the state health department to the same distributor in Florida.

Editorial Note: Salmonellosis associated with reptiles is a continuing public health concern. During the 1970s, small pet turtles were a major source of *Salmonella* infections in the United States. In 1975, the Food and Drug Administration banned commercial distribution of small (i.e.,<4 in. long) turtles; the majority of states prohibited the sale of such turtles. These measures prevented an estimated 100,000 cases of salmonellosis among children each year. However, reptiles remain popular pets in the United States; during 1991-2001, the estimated number of households with reptiles doubled from approximately 850,000 to 1.7 million. The increase in pet reptile popularity has been paralleled by an increase in the number of reptile-related *Salmonella* serotypes isolated from humans.

Reptiles are commonly colonized with *Salmonella* and shed the organism intermittently in their feces. Attempts to treat reptiles with antibiotics to eliminate *Salmonella* carriage have been unsuccessful and might lead to increased antibiotic resistance. *Salmonella* survives well in the environment and can be isolated for prolonged periods from surfaces contaminated by reptile feces. For this reason, even minimal indirect contact with reptiles can result in illness.

Increasing evidence suggests that amphibians also are a source for salmonellosis. Frogs and toads are frequent carriers of *Salmonella* and have been linked by epidemiologic evidence to outbreaks. Overall, reptile and amphibian contacts are estimated to account for 74,000 (6%) of the approximately 1.2 million sporadic *Salmonella* infections that occur each year in the United States.

Evaluation of the effectiveness of mandated point-of-sale education in reducing amphibian- and reptile-associated salmonellosis could help guide future prevention efforts. In the meantime, areas such as NYC have adopted restrictions on the sale of certain reptiles similar to those for small turtles.

REF: Morbidity and Mortality Weekly Report, 52(49), December 12, 2003.

USDA PESTICIDE DATA PROGRAM RELEASES 2002 DATA

The U.S. Department of Agriculture's Agricultural Marketing Service (AMS) announced that the *Pesticide Data Program Annual Summary, Calendar Year 2002* data are available via the Internet at http://www.ams.usda.gov/science/pdp/download.htm.

The Pesticide Data Program (PDP) provides statistically reliable data on pesticide residues detected in selected foods. Since the program was initiated in 1991, PDP has tested 60 commodities including fresh and processed fruit and vegetables, grains, milk, butter, beef and poultry. Testing of finished drinking water began in 2001 and untreated drinking water was added in 2003.

During 2002, PDP tested fresh and processed fruit and vegetables, barley, rice, beef tissues and drinking water for various insecticides, herbicides, fungicides, and growth regulators. Of the 12,899 samples collected and analyzed, 10,056 were fruit and vegetable commodities including, apple juice, apple sauce, canned and frozen sweet peas, sweet corn, as well as fresh apples, asparagus, bananas, broccoli, carrots, celery, cucumbers, mushrooms, onions, peaches, pineapples, potatoes, spinach and sweet bell peppers. PDP also tested 725 samples of barley, 495 rice samples, 924 beef samples, and 699 drinking water samples.

Approximately 78 percent of all samples were domestic and 20 percent were imported. Approximately 1 percent of the samples were of mixed origin and less than 1 percent was of unknown origin. Asparagus, bananas, cucumbers, peaches, and pineapples accounted for most of the imported commodities.

Approximately 47 percent of the fruit and vegetable samples, 15 percent of barley samples, 18 percent of rice samples, and 15 percent of the beef tissue samples had detectable residues. Residues detected in beef samples resulted almost entirely from detections of persistent chemicals and their metabolites, most of which have been canceled for agricultural use for a number of years.

Overall, approximately 58 percent of all samples contained no detectable residues, 19 percent contained 1 residue, and 23 percent contained more than 1 residue. Generally, fewer residues were found in processed products and grains than in fresh commodities. Low levels of environmental contaminants were detected in carrots, celery, potatoes, spinach, and beef adipose tissues. However, the concentrations detected were below levels that trigger regulatory actions.

In finished drinking water, PDP detected low levels (measured in parts per trillion) of some pesticides, primarily widely used herbicides. None of the detections exceeded established EPA Maximum Contaminant Levels (MCL) or Health Advisory (HA) levels.

A tolerance is the maximum amount of a pesticide residue allowable on a raw agricultural commodity. Established tolerances are listed in the Code of Federal Regulations (CFR), Title 40, Part 180. In 2002, PDP testing found residues exceeding an established tolerance in 0.3 percent of the 12,200 samples (excluding drinking water). Residues with no established tolerance were found in 2.7 percent of all samples (excluding drinking water). These residues were detected at very low concentrations and may be due to spray drift, crop rotations, or the use of sanitizers in food handling establishments. PDP reports these findings to FDA when they are reported by testing laboratories.

This report is also available on the PDP Web site at http://www.ams.usda.gov/science/pdp.

REF: Agricultural Marketing Service News Release, 025-04.

DPR RELEASES DATA ON 2002 ILLNESSES

The California Department of Pesticide Regulation (DPR) has released its 2002 summary of pesticide illness information. DPR investigated 1,859 potential cases of pesticide illness in 2002, compared to 979 cases in 2001.

Pesticides were found to be at least a possible factor in 1,316 cases in 2002, compared to 616 cases the previous year (each case represents a person).

Two factors accounted for the increase. First, DPR identified more suspected illnesses through a contract with the California Poison Control System. Second, DPR received a significant number of cases (373 suspected or confirmed illnesses) based on just two incidents. Both involved drift from agricultural field applications of the fumigant metam-sodium.

DPR has taken several enforcement and compliance actions aimed at preventing pesticide drift and other hazards. Last December, DPR reached a $60,000 civil settlement on the largest drift incident in 2002. Other DPR initiatives involving fumigants and drift:

- New methyl bromide regulations, now pending, will limit "seasonal" exposures that primarily involve workers.
- New restrictions will be proposed this year for MITC, the chemical breakdown product of metam-sodium. Some County Agricultural Commissioners have used their authority to impose local restrictions -- such as buffer zones -- for metam-sodium and other fumigants.
- DPR's Enforcement Branch advised County Agricultural Commissioners that drift incident reduction and fumigant application inspections are high priorities for local enforcement this year.

DPR also uses its pesticide illness data as part of an ongoing effort to detect and prevent injury and illness. Some recent initiatives:

- DPR issued formal guidelines to help County Agricultural Commissioners better investigate drift incidents and other pesticide episodes. The guidelines, released last December, will help local authorities survey potential victims and pursue investigations.
- DPR recently revised and simplified worker safety leaflets, printed in English and Spanish, to more clearly communicate field safety requirements for laborers.
- DPR expects to propose new hazard communication ("right to know") regulations to help protect workers this year. DPR has been actively consulting with farm worker advocates and industry representatives on rules to improve the worker notification process for pesticide applications.

Meanwhile, DPR's work with the California Poison Control System (CPCS) to improve illness reporting produced significant results in 2002. The collaborative effort prompted more than 500 investigations. Some 317 were deemed at least possibly related to pesticide exposure. About two-thirds of these cases were non-occupational.

For example, CPCS detected attempted suicides that might not have been reported to DPR. One such case in 2002 involved a 39-year-old man in San Diego County who ate gopher bait. He was taken to an emergency room, kept overnight, and then referred for psychiatric treatment.

Other cases provided by CPCS referrals: An asthmatic woman in Los Angeles County set off an insect fogger in a closed room, then returned to rescue her cat. The woman suffered immediate respiratory symptoms but did not seek medical treatment until the following day; the cat was unharmed. In Yolo County, a woman cleaning her bathroom mixed household chemicals and suffered respiratory problems. And in Imperial County, a youngster who found an insect repellent spray can in a dumpster sprayed the pesticide into the eyes of a playmate. The victim's grandmother immediately flushed the child's eyes with water and sought medical aid.

On average, DPR learned of a suspected illness from CPCS within five days after it occurred. DPR investigators have found that prompt notification is often a crucial factor in successful investigations, and CPCS data proved to be an

important source of information on non-agricultural and non-occupational illnesses. The collaboration between DPR and CPCS began in 2001 and ended in November 2002, when a $100,000 grant from U.S. EPA ran out. DPR plans to resume working with CPCS if funding becomes available.

DPR's Pesticide Illness Surveillance Program, run by the Worker Health and Safety Branch, does not produce a "census" of pesticide injuries, since there is no way to document illnesses that go unreported. Therefore, an increase or decrease in illness statistics in a single year does not indicate the overall success of pesticide regulatory programs.

Instead, the illness surveillance program focuses on assuring that no type of illness is overlooked, and DPR scientists analyze illness data to determine trends and identify potential problem areas. Worker Health and Safety Branch studies have shown that pesticide-related injuries at work, or cases related to agricultural activities, are more likely to be reported than pesticide illnesses at home. Pesticide illness studies -- supported by hospital records -- also show that DPR's program is very effective at detecting any incident involving multiple victims.

Although physicians are required by law to report any suspected pesticide illness, compliance is low. DPR has developed other sources of illness data, and County Agricultural Commissioners investigate every report they receive from physicians, DPR, or other sources. DPR's Worker Health and Safety Branch then reviews county investigations and determines whether cases are pesticide-related.

The second largest drift incident in 2002 occurred in Kern County in June, when 138 vineyard workers arrived on the job just as a metam-sodium application was ending in an adjacent field. While only one worker sought medical care, DPR determined that 123 of the workers developed exposure symptoms such as eye and respiratory irritation, and headaches. (No information was available on the remaining 15 workers.) Enforcement action is pending in that case.

Other data from the 2002 illness summary:

- Incidents totaled 656 in 2002, compared to 539 the previous year. (An incident involves one or more suspected cases. The number of incidents has generally declined in the past decade; during the early 1990s, the total number of incidents exceeded 1,000 annually. In the same time period, DPR also undertook substantial efforts to improve reporting.)
- About 60 percent of the reported illnesses involved occupational exposures. Slightly more than half of them (53 percent) involved use of pesticides for agricultural purposes.
- Of the 1,316 suspected cases, a definite connection to pesticide exposure was established in 105 cases. Another 920 were classified as probable, and 291 as possible.
- Some 240 cases involved field workers. Fumigations were implicated in 160 of these (including the 123 in the Kern County vineyard incident described above). Some 78 worker illnesses involved exposure to residues, and early reentry was a frequent factor.
- DPR investigated five deaths in 2002, and found three definitely related to pesticide exposure. An 88-year-old Alzheimer's disease patient in San Bernardino County mistook a sanitizer for apple juice. An 88-year-old farmer in Stanislaus County using bleach bottles to store an organophosphate pesticide and water drank from the wrong bottle and sought medical aid, but died in the hospital. In the third fatality, a man broke into his San Diego County home during a fumigation.

For an online summary of the 2002 pesticide illness data, see www.cdpr.ca.gov/docs/whs/2002pisp.htm.

(For a county-by-county breakdown of suspected pesticide illnesses, see www.cdpr.ca.gov/docs/pressrls/2002illnesstable.pdf.)

REF: DPR Online Bulletin,February 26, 2003.

TOXICOLOGY TIDBITS

~~ New pesticide safety and integrated pest management materials available

The EPA Office of Pesticide Programs announced the availability of several new documents providing valuable information on pesticide safety and integrated pest management.

1) "**Help Yourself to a Healthy Home: Protect you Children's Health**" This popular booklet was a "best seller" last year and contains 56 pages of helpful information for parents, grandparents and other care givers. It tells you what you need to know about environmental contaminants found in many American homes and how to protect your family from risks posed by carbon monoxide, unhealthy drinking waters, poor indoor air quality, lead poisoning, hazardous household products, pesticides, and much more. It has "Questions to Ask" that will help you learn if you home has hidden safety and health dangers, and suggests a wide range of action steps you can take to protect your children's health – and make your home a Healthy Home. This booklet is also available in Spanish as "Contribuya a Tener un Hogar Sano." To order, call Kathy Seikel at 703-308-8272, or email seikel.kathy@epa.gov.

2) "**Join our Pest Patrol: A Backyard Activity Book for Kids on Integrated Pest Management**." This brand new publication is geared at elementary school children in grades 3-5. Originally developed by the Minnesota Department of Agriculture under an EPA grant, "Join our Pest Patrol" proved to be such a success with educators that we have now adapted it for nationwide use. Join our Pest Patrol contains 29 pages of fun activities that can easily be incorporated into reading, science, or even math and art classes. It provides kids - and teachers - with important information about pest identity and biology, and ecology. Even more important, it helps children understand the impact our personal choices – like whether or not to use chemicals to control pests – can have on the environment. To order, call Kathy Seikel at 703-308-8272 or email seikel.kathy@epa.gov. Bulk orders accepted.

3) Pesticide safety promotional items and pamphlets. EPA's Consumer Labeling Initiative (CLI) offers a wealth of information and free promotional items to raise awareness about the importance of reading pesticide products labels. Promotional items available free of charge to the public include rulers, bag clips, and jar openers. CLI has also developed a number of popular brochures including "**Read the Label First! Protect your Household," "Read the Label First! Protect your Garden," "Read the Label First! Protect your Children," and "Read the Label First! Protect your Pets**." To order, call 703-305-5017 or send an email request to lormand.mary-jean@epa.gov.

REF: U.S. Environmental Protection Agency, January 12, 2003.

~~ Preventing *Listeria* Contamination in Foods

Listeria monocytogenes (L. monocytogenes) is a harmful bacterium that can be found in a variety of foods. In pregnant women, *L. monocytogenes*-caused illness can result in miscarriage, fetal death, or severe illness or death of a newborn infant. The elderly and those with weakened immune systems are also at risk for severe illness or death from *L. monocytogenes*-contaminated food.

Keeping ready-to-eat foods cold is key to reducing listeriosis, a serious infection in humans. That's one of the conclusions of a recent Food and Drug Administration risk assessment on the relationship between foodborne listeriosis and human health.

Link to http://www.fda.gov/ for the full article.

REF: *FDA Consumer*, January-February, 2004.

~~ Food safety and fresh produce

Recent outbreaks of food-related illnesses have increased many people's concerns about the safety of fresh fruits and vegetables — regardless of whether the cause is hepatitis A, *Escherichia coli* (*E. coli*), or some other foodborne microorganism. These concerns already had increased during the past decade when, due primarily to an increased awareness of the health benefits fresh produce provides, people in the United States were eating more of these foods. When mom told us to eat fresh fruits and vegetables, she knew what she was talking about: these foods contain compounds that help decrease the risk of many illnesses, including cancer and macular degeneration. In addition, consumers in the United States expect to have a multitude of fresh produce available year round. To supply this demand, the produce industry has developed a distribution system to move both domestic and foreign produce to the dinner table.

For the full report link to: http://www.cast-science.org

REF: CAST (Council for Agricultural Science and Technology) Commentary, December 2003

~~ 10th Edition of Report on Carcinogens now Available

The Department of Health and Human Services has published its biennial Report on Carcinogens, adding steroidal estrogens used in estrogen replacement therapy and oral contraceptives to its official list of "known" human carcinogens. This and 15 other new listings bring the total of substances in the report, "known" or "reasonably anticipated" to pose a cancer risk, to 228.

The tenth report newly lists the group of hormones known as steroidal estrogens as "known human carcinogens." A number of the individual steroidal estrogens were already listed as "reasonably anticipated carcinogens" in past editions, but this is the first report to so list all these hormones, as a group. As with all the other medications listed, the Report on Carcinogens does not address or attempt to balance potential benefits of use of these products.

Also newly listed as "known" causes of cancer in humans are broad spectrum ultraviolet radiation, whether generated by the sun or by artificial sources; wood dust created in cutting and shaping wood; nickel compounds and beryllium and its compounds commonly used in industry. Beryllium and beryllium compounds are not new to the list but were previously listed as "reasonably anticipated to be a human carcinogen."

The report is accessible at http://ntp-server.niehs.nih.gov

REF: Press Release, NIEHS (National Institute of Environmental Health Sciences), Dec. 11, 2002.

~~ GRAS: Time-Tested, and Trusted, Food Ingredients

If Marco Polo were to attempt to bring back spices from the Orient today, he would have more to worry about than pirates. The 13th century explorer now would be required to prove that his cargo is not toxic, does not cause birth defects, and will not interfere with nutrition or affect individuals with allergies--unless the flavorings already are "generally recognized as safe" (GRAS) by the Food and Drug Administration.

GRAS is one of four legal categories set up by Congress under the 1958 Food Additives Amendment to the Federal Food, Drug, and Cosmetic Act (FD&C Act). At the time, knowledge about food science and the potential long-term harmful effects of food chemicals on health were beginning to surface. Congress decided it was not necessary for the food industry to prove the safety of substances such as salt, sugar, and spices intentionally added to foods if they were already generally regarded as safe by qualified scientists.

A GRAS substance, therefore, is one that has a long, safe history of common use in foods, or that is determined to be safe based on proven science. If, however, new evidence suggests that a GRAS substance may no longer be safe, the FDA can prohibit its use or require further studies to determine its safety.

Some substances may be GRAS for one use, but not for others. For example, some uses of a food substance are intended for a narrowly defined population, such as newborn infants who consume infant formula as the sole item of the diet. In this case, there may be special considerations associated with that population, but not with general use of the food substance.

Manufacturers add substances to foods to prevent spoilage or to enhance appearance, taste, texture, or nutritive value. Without them, cakes wouldn't rise, salt would lump, bread would mold more easily, ice cream would separate into ice crystals, and marshmallows would harden into bite-sized rocks. Food additives allow us to enjoy a variety of safe, wholesome, and tasty foods all year round. They also help make convenience foods readily available.

New Food Additives

The FDA approves new ingredients for use in the food supply based on reviews of extensive scientific research on safety. To market a new food additive, a manufacturer must first petition the FDA for its approval. The petition must provide convincing evidence that the proposed additive performs as it is intended. Animal studies using large doses of the additive for long periods often are needed to show that the substance would not cause harmful effects in people when eaten in expected amounts. Studies of the additive in humans also may be submitted to the FDA.

If an additive is approved, the FDA issues a regulation that may include the types of foods in which it can be used, maximum amounts to be used, and how it should be identified on food labels. To further assure safety, the FDA may require the manufacturer to monitor its use. All additives are subject to ongoing safety reviews as scientific understanding and methods of testing continue to improve.

If ingredients such as new sweeteners are added to conventional foods without being approved by the FDA, the food may be considered adulterated or misbranded. The FD&C Act prohibits marketing conventional foods containing ingredients that are not either GRAS or newly approved by the FDA, as well as health claims made about their use on the product's labeling.

For More Information

- The FDA Center for Food Safety and Applied Nutrition
- "Everything" Added to Food in the United States (EAFUS database)

GRAS or prior-sanctioned status does not guarantee a substance's safety. Sometimes new evidence shows that a substance may not be as safe as it was commonly thought to be. If new data suggests that a substance under either of these categories may be unsafe, the FDA may take action to remove the substance from food products or require the manufacturer to conduct studies to evaluate the newly raised concern.

REF: FDA Consumer magazine

~~ BSE and the Safety of Pets

The same safeguards in place to protect the U.S. food supply from the agent that causes Bovine Spongiform Encephalopathy (BSE) are also protecting pet foods.

Shortly after government officials first announced that a cow in the U.S. had tested positive for BSE, pet owners began contacting the Center for Veterinary Medicine to ask if their pets would be safe. In response, CVM issued this statement: With the exception of cats, no pets (companion animals) are known to be susceptible to the infectious agent that causes BSE in cattle. No evidence of BSE has ever been found in dogs, horses, birds, or reptiles. However, cats are susceptible. Approximately 90 cats in the UK and several cats in other European countries have been diagnosed with the feline version of BSE, or FSE. Before it was recognized that they were susceptible to the BSE agent, cats were exposed to the infectious agent through commercial cat food or through meat scraps provided by butchers. The number of reported cases of FSE in the UK and Europe has been declining annually since 1994 after implementation of feed bans in those countries.

Currently in the U.S., animal products that are prohibited from cattle feed are acceptable for use in pet food. Such products include meat and bone meal, for example. However, FDA believes that the safeguards it has put into place (specifically, the 1997 rule banning the use of mammalian tissue in ruminant feeds) to prevent BSE in the U.S. have also protected cats. To date, no case of FSE has been found in the U.S. Material from the BSE positive cow in Washington State (discovered December 23, 2003) did not pose a risk to cats in the U.S. because none of it was released into distribution. All firms involved with the incident in Washington State were found to be in compliance with the BSE rules.

In addition, when the BSE positive cow was found in Canada in May 2003, the FDA stopped imports of all pet foods made from material derived from mammalian sources, and the pet food manufacturer recalled the food it had manufactured that was thought to contain material from the infected cow.

FDA continues to review these safeguards to be sure they are adequate, especially in light of the first BSE case found in the U.S. FDA announced additional measures on January 26 to further safeguard the U.S. food supply against BSE. These actions will diminish the risks of BSE's spread even further, thus better protecting all pets.

REF: FDA Veterinarian, January-February, 2004.

~~ FIFRA SAP Releases Report on CCA-Treated Wood

The FIFRA Scientific Advisory Panel (SAP) has released a report on EPA's preliminary probabilistic exposure and risk assessment for children who are exposed to chromated copper arsenate-treated wood. According to the draft assessment, children who play on CCA-treated decks and play sets have an increased risk of developing cancer over their lifetime. At a December meeting, the FIFRA SAP examined the draft and the most recent version of the Stochastic

Human Exposure and Dose Simulation (SHEDS) Model, which was designed to predict children's exposure to CCA-treated lumber and was used to develop the assessment. The SAP's report resulted from that meeting and includes the panel's response to EPA's questions about the adequacy of the data and the assumptions used in the SHEDS model, uncertainties related to the assessment, and the use of new data.

Generally, the SAP was supportive of the agency's efforts to improve SHEDS, an earlier version of which was reviewed by the panel in 2001. However, panel members said that certain aspects of the model and of EPA's use of it need work. For example, the panel recommended that the agency refine model variables relating to human behavior, such as the average number of days per year a child plays on CCA-treated play sets. The panel also recommended that EPA further develop its description of the uncertainties inherent in the data used for modeling and the influence those uncertainties have on interpretation of modeling results. The panel said it's "likely the overall uncertainties are understated" in the agency's assessment.

Unrelated to EPA's efforts, the panel was asked to review a biomonitoring study proposed by the Wood Preservative Science Council (WPSC). In the report, the SAP said it has determined that the proposed study is "deficient" in many ways and would provide little useful data to address the uncertainties surrounding children exposed to CCA-treated wood.

In the 2001 SAP meeting, the panel recommended that a biomonitoring study be performed on children who are normally exposed to CCA-treated wood to resolve the issue of whether such children are substantially exposed to arsenic residues. In response, WPSC proposed conducting a study on whether significant differences in urinary arsenic can be discerned when a group of children switch from arsenic containing tap water to arsenic-free drinking water.

The panel said that if the study was implemented as proposed, "results are unlikely to be reliable, meaningful or useful with respect to improving an understanding of factors affecting CCA-related [arsenic] exposure and absorption." It also noted that any study seeking to meet the 2001 SAP request would need to involve children exposed to CCA-treated wood. (Pesticide & Toxic Chemical News, February 16, 2004, Volume 32, Number 17)

REF: Pesticide Reports, March 2004

~~ Bombs Away

A San Diego, CA family nearly blew their home apart last month by setting off 19 "bug bomb" foggers to control cockroach and rat infestations. SignOnSanDiego.com reports that no one was injured by the blast, which blew the back door off its hinges, rent gaping holes in the ceiling, spewed bits of wall, insulation, nails and glass about like confetti and sent Christmas decorations out into the street. The family had just exited the house for their car when the explosion occurred.

Investigators believe the bug bombs were ignited by a pilot light on a wall heater. Damage is estimated at $150,000, and city authorities believe the 470-square-foot rental will have to be entirely rebuilt. The incident prompted authorities to remind residents that **all appliances should be shut off when bug bombs are used and that one can is plenty for a 600-square-foot home.** These warning were reportedly printed on the products that exploded; however, the family is not fluent in English. (Pesticide & Toxic Chemical News, Vol. 32, No. 12, January 12, 2004)

REF: Pesticide Reports, March 2004

~~ State Health Department Warns Consumers Not to Eat Chaca Chaca, Lead-Contaminated Candy From Mexico

Consumers, particularly infants, young children and pregnant women, should avoid eating Chaca Chaca, an imported chili-based candy from Mexico, because this product may contain excessively high levels of lead that could cause serious health problems, Dr. Gilberto Chavez, associate director and state epidemiologist of the California Department of Health Services (CDHS), warned.

"Lead is toxic to humans, especially infants, young children and developing fetuses, in both short- and long-term exposures, and can result in learning disabilities and behavioral disorders that could last a lifetime," Chavez said.

Recent analysis of Chaca Chaca by the U.S. Food and Drug Administration (FDA) identified that the candy may contain as much as 0.3 to 0.4 micrograms of lead per gram of product. FDA has recommended that children under age 6 should not consume more than 6.0 micrograms of lead each day from all food sources. Because of the large size of these candies, which are more than 30 grams in weight per piece, a young child eating one of these contaminated candies could ingest nearly twice the recommended level. FDA has placed the Chaca Chaca product on "Import Alert" to detain future shipments of the candy and prevent its importation into the United States.

Chaca Chaca is a brownish-red colored fruit pulp bar that is coated with salt and chili powder. The candy is sold in packages of several small individually wrapped strips that often include a picture of a locomotive on the wrapper. The candy can be found in small markets throughout California.

Pregnant women and parents of children who may have consumed Chaca Chaca should consult with their physician or health care provider to determine if further medical testing is warranted. For more information about lead poisoning, parents and caretakers should contact their local childhood lead poisoning prevention program or local public health department. Additional information and a list of local childhood lead prevention programs are available at CDHS' Web site at http://www.dhs.cahwnet.gov/childlead/. The California Childhood Lead Poisoning Prevention Branch can also be reached at (510) 622-5000 for a list of these programs.

Consumers in possession of Chaca Chaca candy should dispose of the product or return it to the place of purchase for a refund. The public is encouraged to report any sellers of the candy by calling CDHS' Services Complaint Hotline at 1-800-495-3232.

REF:California Department of Health Services website, March 18, 2004.

VETERINARY NOTES

Guidance on Animal Drugs and Antimicrobial Resistance

The FDA has released new guidance that outlines a comprehensive approach to preventing the antimicrobial resistance that may result from the use of antimicrobial drugs in animals.

Antimicrobial drugs, such as antibiotics, are medicines often used to treat bacterial infections in both humans and animals. Their use has been one of the great advances in modern medicine--helping to prevent many of the illnesses that were leading causes of death for most of human history. When bacteria develop resistance, human and animal health is at risk because the medicines that we depend on to treat infections become ineffective.

The guidance provides a risk assessment process for animal drug sponsors to determine the likelihood that an antimicrobial drug used to treat an animal may cause an antimicrobial resistance problem in humans who consume meat or other products from that animal. This process can help prevent antimicrobial drugs with a high risk of causing antimicrobial resistance problems in humans from being improperly used in food-producing animals. Food-producing animals include cows, pigs, chickens, turkeys, sheep, and fish.

If the assessments show that the risks are significant, the FDA could deny the application to market the drug, which would prevent the use of the drug in food-producing animals, or the FDA could approve the drug, but place conditions on its use to ensure it would not pose a human health risk.

For more information, see www.fda.gov/oc/antimicrobial/questions.html.

REF: FDA Consumer, January-February 2004.

New Law to Improve Animal Drug Review

President Bush has signed legislation that provides user fees to the FDA for animal drug reviews. Known as the Animal Drug User Fee Act (ADUFA), the law, passed in November 2003, establishes a funding system for the new animal drug review process that is similar to that established for the human drug review process more than a decade ago.

The fees collected for these services will be directed toward the FDA's Center for Veterinary Medicine (CVM) and will be used to provide additional resources for its animal drug review program. The goal is to achieve shorter, more predictable review times by increasing the review staff at CVM and by building better management systems. As a result, the FDA anticipates substantial savings to the industry in regulatory review and developmental expenses without compromising the agency's high standards for safe and effective products.

The FDA is authorized to collect $5 million in fees in fiscal year 2004, which began Oct. 1, 2003; $8 million in fiscal year 2005; and $10 million in fiscal years 2006 through 2008. The law provides for specific waivers or reductions of fees, including for small businesses and where the fees would present a significant barrier to innovation.

"The resources provided by this law will help CVM scientists keep pace with the rapid advances in science and medicine that drive the quality of health care for our animals," says CVM Director Stephen Sundlof, D.V.M., Ph.D. "We view this legislation as a vital component in our commitment to promote and protect public and animal health."

REF: FDA Consumer, January-February 2004.

Safety of Food Animal Clones

The FDA has undertaken a process to assess the safety of food products derived from cloned animals and the risks to animals involved in cloning.

The process began two years ago, when the FDA commissioned the National Academy of Sciences (NAS) to consider scientific information on animal biotechnology. The NAS concluded that although food from animal clones posed only a low level of food safety concern, it would be prudent to have more data in order to minimize further safety concerns.

The FDA decided that before it could address any policy issues on animal cloning, it needed to conduct a risk assessment, followed by development of risk management options, in an open and transparent process.

Cloning is a process that allows livestock breeders and others to replicate their best animals, which are then used for breeding stock. Cloning can also be used to expand populations of endangered species.

The FDA previewed a risk assessment on animal cloning in November 2003 at a public Veterinary Medicine Advisory Committee meeting held in Rockville, Md.

The draft risk assessment builds on findings of the NAS and indicates that food products derived from animal clones and their offspring are likely to be as safe to eat as food from their non-clone counterparts, based on all the evidence available. These scientific findings also showed that healthy adult clones are virtually indistinguishable from their conventional counterparts.

Pending a final decision on cloned animals, the agency will continue to request that producers withhold from the market animal clones, their progeny, or products derived from them, with the full expectation that firms will comply with this request as they have willingly done in the past.

Following the close of a public comment period on the risk assessment, the FDA will review the comments in preparing a final risk assessment and draft risk management options.

REF: FDA Consumer, January-February 2004.

BSE Cow in U.S. Triggers FDA, USDA Cooperative Response, New Rules Announced

This article provides an overview of the events that started when the presumptive positive cow was first discovered, and a description of the responsibilities and functions of FDA and USDA—how they work together to ensure the safety of public health.

Link to: FDA Veterinarian

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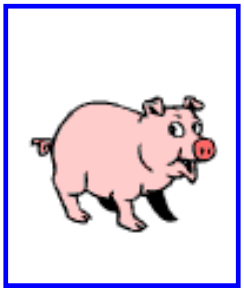

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