Cooperative Extension --- University of California, Davis

Environmental Toxicology Newsletter

"Published Occasionally at Irregular Intervals"

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Vol. 22 No. 3 -- August 2002

"IN THIS ISSUE "

Pesticide Residues in Produce, Year 2000 California Results

Written by Dr. Art Craigmill

It has been some time since the California Department of Pesticide Regulation (DPR) has published the results of their residue monitoring program. The data are available now on the internet, and we downloaded the year 2000 results and analyzed them. The DPR website address for the data is:
http//www.cdpr.ca.gov/docs/pstrsmon/rsmonmnu.htm

These data are for the year 2000, and can be downloaded as delimited text files for direct import into database software for analysis. All data analysis presented in this article were done by me using FoxPro for database management. The Powerpoint slides are available by request, just send me a note that you would like a copy.

The bottom line of all the monitoring is that producers continue to do an excellent job of providing us with excellent produce with legally acceptable concentrations of residues. There are very few violative samples, and a high percentage of samples with non-detectable residues (almost 60% of traditionally grown produce).

Residue Data Dictionary

Column	Synonym	Data Type	Description	
applic dt	application date	DATE	Actual date when pesticide was applied to the sample, if known.	Some samples do not have th
chem code	chemical name		The chemical name of any residue detected. Designated "NONE" if none detected.	Name of chemical is based o
commodity	commodity		Name of commodity collected for sampling.	Reference used is the FDA c
county cd	county code	CHAR(2)	2 digit numeric code assigned to each county within the State of California.	Derived from County Code T sample. Not always applicab
detect cd	detection code	NUMBER(8)	This code designates what kind of detector or detection system was used.	Each laboratory uses this fiel
detect limit	detection limit	DECIMAL(10,7)	The lowest reading that an instrument can give for a given compound. This detection limit can be different for every chemical.	This value depends on the typ laboratory.
dist cd	district code	NUMBER(1)	The District Code is assigned to each Enforcement regional office. Each region is given a single digit code.	Current district codes are: 0= 4=Sacramento, 5=Richmond
extract cd	extraction code	NUMBER(8)	This extraction code is used as a reference for the method of extraction. The Federal Food and Drug Administration and each laboratory uses this field and assigns the proper extraction code value.	For instance '9999' means th Food and Agriculture's extra
harv dt	harvest date	DATE	Actual date of harvest.	Some samples do not have th
lab cd	lab code	NUMBER(2)	1 digit Laboratory Code assigned to each chemical lab. Designates which lab conducted the analysis.	Current codes are: 1=Berkel 5=Richmond
lab no	lab number	NUMBER(8)	The Lab Number is a number assigned by each laboratory conducting the analysis. It is a unique identifier.	Each laboratory has its own calendar year.
organic cd	organic code	NUMBER(1)	Check box used to indicate whether the produce is organically grown. Information for 1996 forward only.	Source is Produce Sample A entry screen. Checked=yes;
origin cd	origin code	CHAR(3)	Origin code is used to indicate the state or foreign country in which the commodity was grown.	
pest applied	pesticide applied	VARCHAR2(50)	Pesticide applied to the sample. Include information obtained from a Pesticide Use Report or on the packed container, or from other sources.	Some samples do not have th Program samples.
program	program		Indicates under what type of state program this sample was obtained.	During 1999, the Priority Pro
residue	residue amount	DECIMAL(10,7)	The amount of residue detected on this particular sample.	
sample dt	sample date	DATE	The date which the sample was collected.	Format is: dd-mon-yy. Manc
sample no	sample number	CHAR(9)	A unique number given to each sample by the sample collector.	Must include field inspector's
sample size	sample size	VARCHAR2(20)	The required amount of produce to sample. This is the size of the sample taken.	
site cd	sample site	NUMBER(1)	Type of location from which the sample was gathered. For instance: Wholesale, Chain Store Distribution Center, Retail, Point of Entry, and Point of Origin.	
tolerance	chemical tolerant amount	DECIMAL(10,7)	Is the legal amount of chemical which can be found on a commodity and these tolerances can be found in 40CFR180 (Code of	Before a pesticide can be leg tolerance or grant an exempti

California Database Description of Fields

The DPR database has numerous fields for each data record, describing the location, the type of produce, pesticides detected, etc. Detailed analysis can be done on the data, however I focussed primarily on the number of individual samples and if any pesticide was detected on a sample. Additionally, I looked to see how many samples had more than one detect, and greater than 2. The presence of more than one residue does NOT imply a greater risk, contrary to what some people think, it only shows that more than one residue was found on that article when sampled.

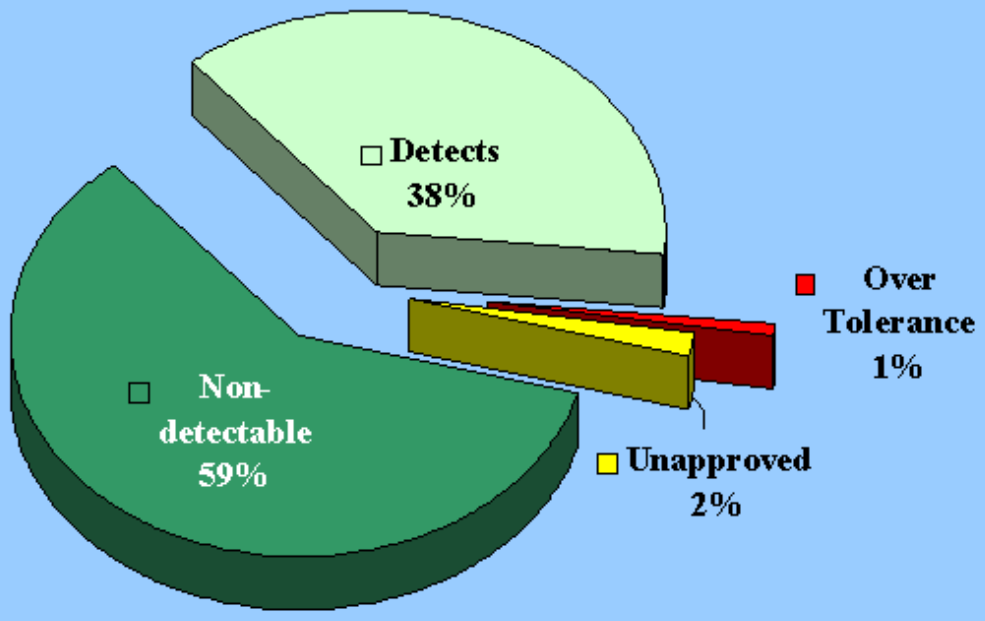
Origin of Year 2000 Samples

Source Breakdown				
Total	US	CA	US-NonCA	Foreign
7,978	5,756	5,178	578	2,222

This slide shows the origin of the samples tested. Most of the domestic samples were from produce grown in California, and about 1/4 of the samples tested were of foreign origin.

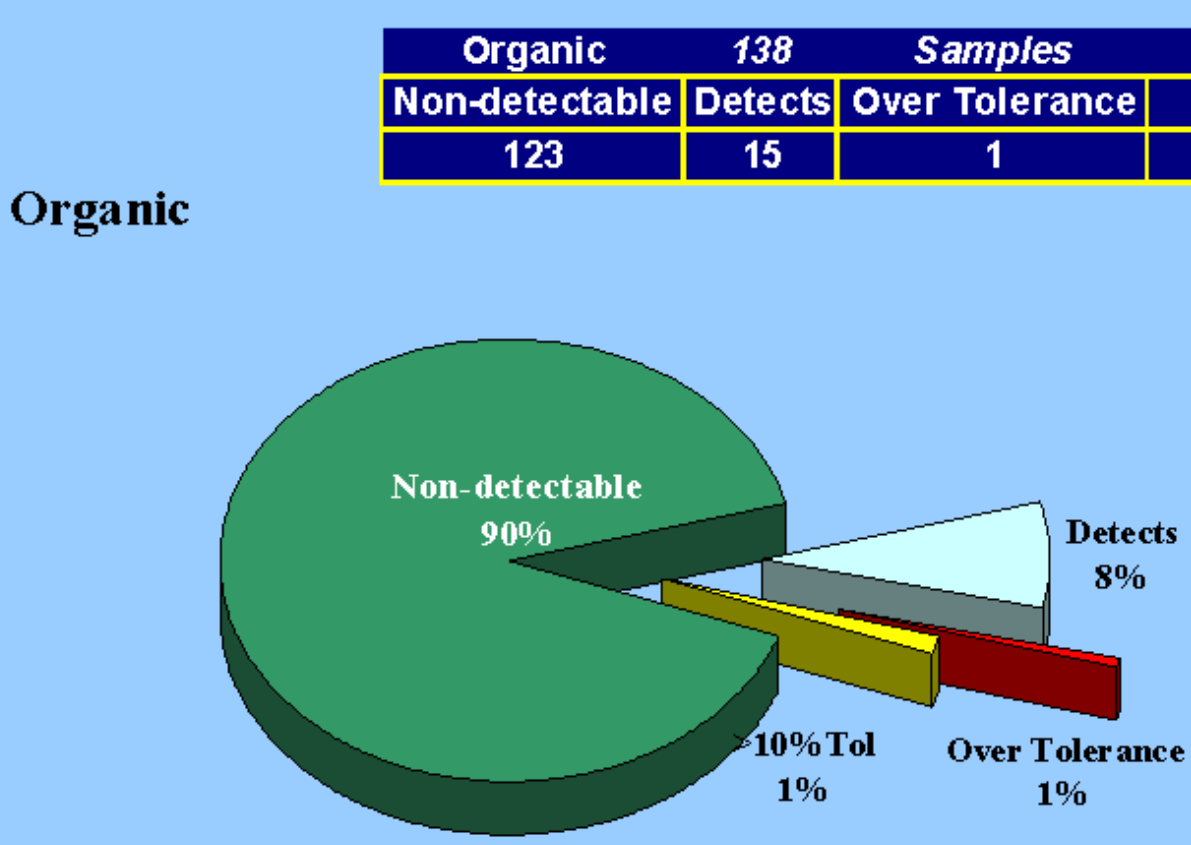
Traditional	*7840 Samples*		
Non-detectable	Detects	Over Toleran	Unapproved
4,799	3,041	71	143

Traditional



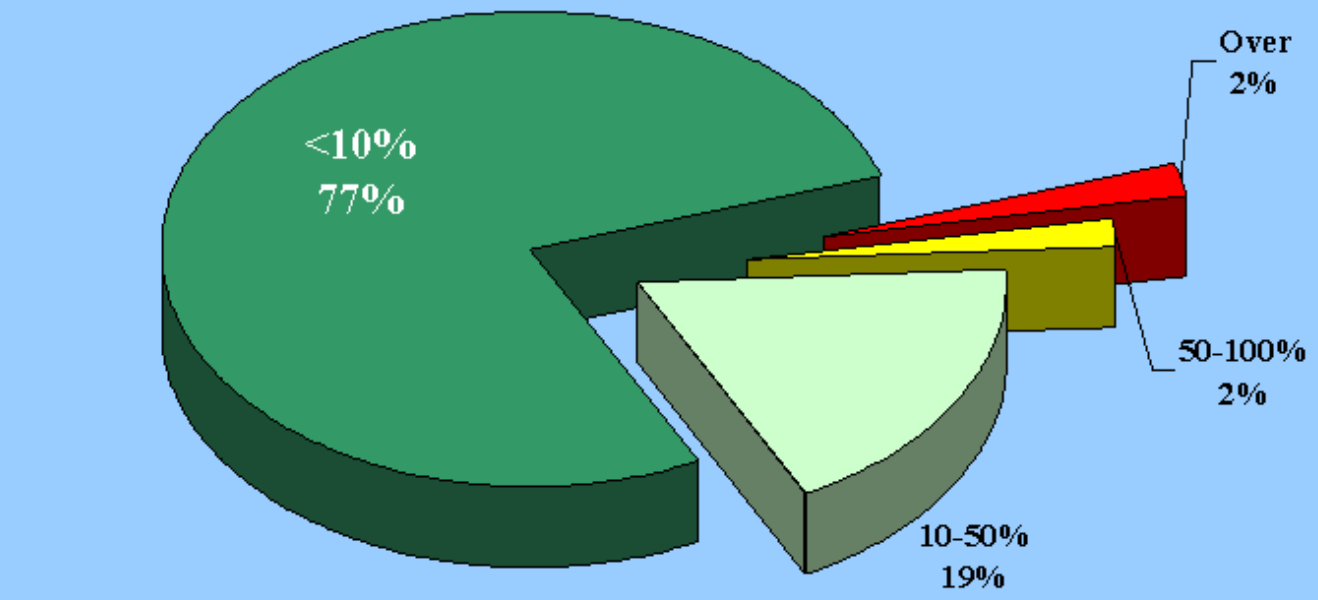
This slide presents the results of produce grown in a conventional manner (not organic produce) both foreign and domestic. Fifty-nine percent of all samples tested had no detectable residues using analytical techniques which can detect down to below 10% of established tolerances. Thirty-eight percent had detectable residue concentrations which were at or below tolerance (legal), two percent had detectable residues for pesticides which were not approved for use on that crop (illegal) and less than one percent were over tolerance (illegal).

Organic	138	Samples	
Non-detectable	Detects	Over Tolerance	>10%Tol
123	15	1	2



These are similar data for produce grown organically, showing 90% with non detectable residues, 15 samples with detectable concentrations, 2 with detectable concentrations equal to or less than 10% of established tolerances, and 1 sample over tolerance.

Detectable Residue as percent of Tolerance			
50-100%	10-50%	<10%	Over
59	602	2,512	71

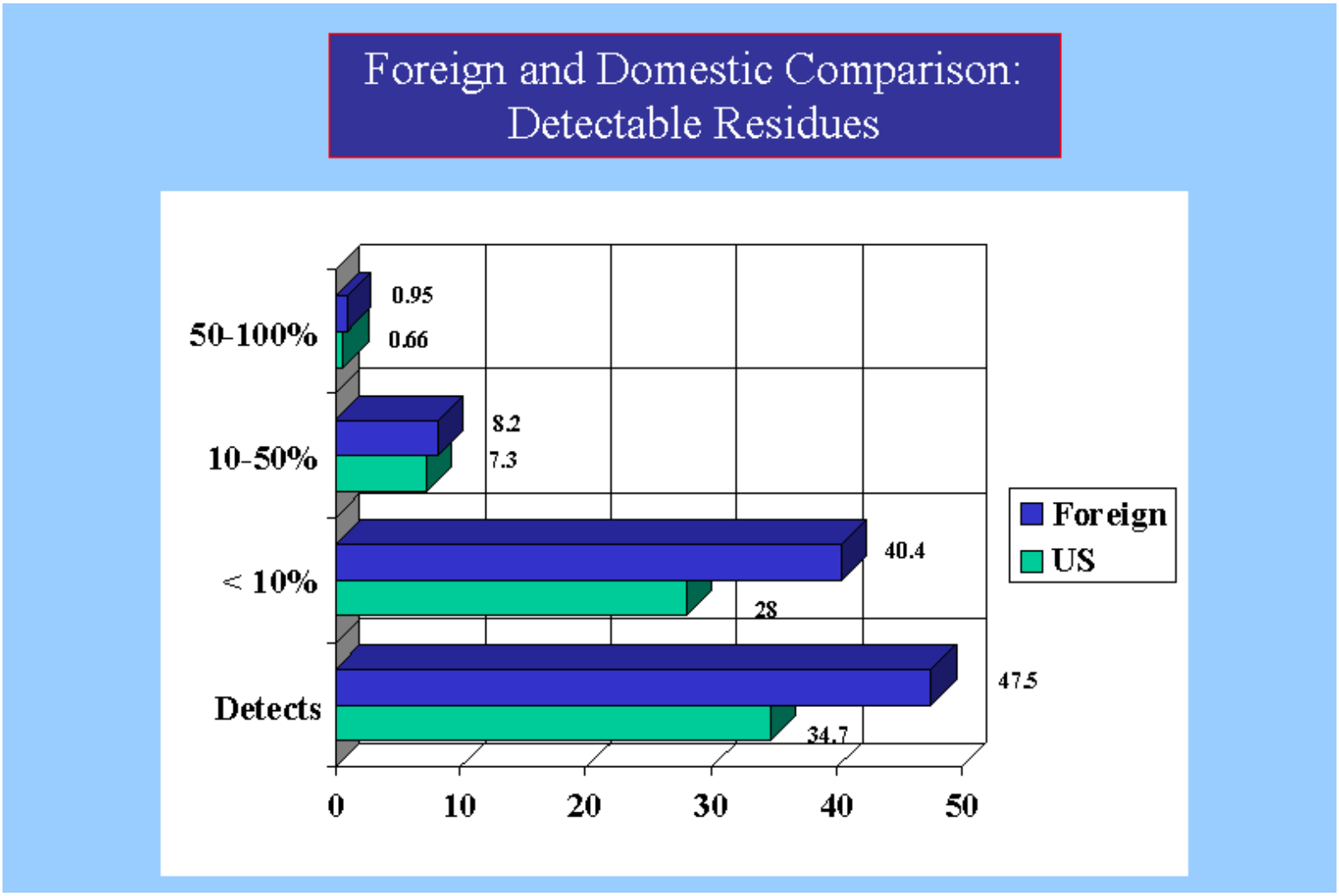


For all samples, conventional and organic, 77% of all samples with detectable residues had residue concentrations equal to or less than 10% of tolerance, only 19% from 10-50% of tolerance, and only 2% from 50-100% of tolerance. Only 2% of the samples which had detectable concentrations were over tolerance (illegal).

Foreign and Domestic Comparison

	Total	Detects	No Tolerance	> Tolerance
US	5,756	1,997	93	19
Foreign	2,222	1,055	51	52
Percent of Total		*Detects*	*No Tolerance*	*> Tolerance*
US	-	*34.7*	*1.6*	*0.33*
Foreign	-	*47.5*	*2.3*	*2.34*

If comparisons are made of foreign and domestic produce, there is a slightly higher percentage of foreign samples which have detectable residues, residues for which a tolerance has not been established on that particular crop, and residues over tolerance.



This graph shows the comparison of the percent of samples which fall into the less than 10% of tolerance, the 10-50% of tolerance and the 50-100% of tolerance categories for foreign and domestic samples.

Samples with more than one residue detected

Multiple Residue Samples

All Samples		US	US	Foreign	Foreign
>1	>2	>1	>2	>1	>2
1,380	208	555	57	433	151
17%	*3%*	*10%*	*1%*	*19%*	*7%*

This slide presents the results for samples which contain more than one residue, and also those which contain more than 2 residues (3 or greater). The percentages are for the percent of samples with detectable residues, thus 83% of those samples which had a detectable residue, had only one residue detected.

Each year we see reports that say pesticide residues on produce are imposing an increased risk of cancer and other problems for consumers of produce which contain such residues. The data presented above on the occurrence of residues on RAW UNPROCESSED AGRICULTURAL PRODUCE should not be used for risk assessment. The total diet study which measures pesticide residues in foods AS THEY ARE CONSUMED is the best source of exposure data. The monitoring data above are useful for assessing compliance with regulations governing pesticide use on food crops. The results indicate that overall, producers are doing a good job at following regulations.

Fixed Obstructive Lung Disease in Workers at a Microwave Popcorn Factory - Missouri, 2000-2002

In May 2000, an occupational medicine physician contacted the Missouri Department of Health and Senior Services (MoDHSS) to report eight cases of fixed obstructive lung disease in former workers of a microwave popcorn factory. Four of the patients were on lung transplant lists. All eight had a respiratory illness resembling bronchiolitis obliterans with symptoms of cough and dyspnea on exertion, had worked at the same popcorn factory at some time during 1992-2000, and had spirometric test results that were lower than normal for both FEV1 (forced

expiratory volume in 1 second) and FEV1/FVC (forced vital capacity) ratio. Employment durations ranged from 8 months to 9 years. The findings of this investigation indicate that workers exposed to flavorings at microwave popcorn factories are at risk for developing fixed obstructive lung disease. Public health authorities, employers, and health-care providers are collaborating to prevent obstructive lung disease in popcorn factory workers.

Editorial Note: Bronchiolitis obliterans, a rare, severe lung disease characterized by cough, dyspnea on exertion, and airways obstruction that does not respond to bronchodilators, can occur after certain occupational exposures. Inhalation exposure to agents such as nitrogen dioxide, sulfur dioxide, anhydrous ammonia, chlorine, phosgene, and certain mineral and organic dusts can cause irreversible damage to small airways without affecting chest radiograph and diffusing capacity.

This investigation initiated by MoDHSS identified a large cluster of conditions resembling bronchiolitis obliterans associated with occupation at a microwave popcorn factory. The results of this investigation raise concern about possible risk for workers in other flavoring and food production industries. Recent reports to the Centers for Disease Control (CDC) document bronchiolitis obliterans cases in the settings of flavoring manufacture and a case of fixed-airways obstruction in a worker at a microwave popcorn factory in Nebraska.

The Food and Drug Administration regulates flavorings based on the safety of the amounts consumed, not the safety of prolonged worker inhalation of high concentrations. CDC has no evidence to suggest risk for consumers in the preparation and consumption of microwave popcorn.

CDC is investigating whether other cases of fixed obstructive lung disease have occurred in workers at other microwave popcorn factories. Health-care providers should report to state health authorities and CDC any cases of suspected occupational respiratory disease in workers exposed to food flavorings.

REF: *Morbidity and Mortality Weekly Report*, 51(16);345-7, April 26, 2002.

Methemoglobinemia Following Unintentional Ingestion of Sodium Nitrite - New York, 2002

Methemoglobinemia is an unusual and potentially fatal condition in which hemoglobin is oxidized to methemoglobin and loses its ability to bind and transport oxygen. The most common cause of methemoglobinemia is the ingestion or inhalation of oxidizing agents such as nitrates or nitrites (e.g., sodium nitrite, which is used commonly as a preservative in curing meats and fish). This report summarizes the investigation of an incident of methemoglobinemia in five members of a household in New York who became ill after eating a meal seasoned with a white crystalline substance from a plastic bag labeled "Refined Iodized Table Salt". The findings underscore the need for proper storage of hazardous materials to avoid unintentional ingestion and the importance of collaboration by multiple agencies to address a potential public health emergency.

On May 16, 2002, Yonkers, New York, emergency personnel were called to a household in which five adults of Middle Eastern descent (three men aged 40, 43, and 44 years and two women aged 60 and 29 years) reported symptoms of dizziness, lightheadedness, and cyanosis almost immediately after sharing a meal. Two of the men also reported vomiting. A sixth person, a man aged 21 years, who did not eat the meal, was asymptomatic.

Epidemiologic Investigation

The implicated meal consisted of meat, rice, and vegetables. The meat was purchased on May 15, 2002, from a national discount food warehouse. It was boiled in water to which was added a white crystalline substance from a plastic bag labeled "Refined Iodized Table Salt" in both English and Arabic. Herbs were added to the water, which was subsequently used to make the rice and vegetables. Samples of all residual food items from the implicated meal were obtained for analysis, including all herbs, the product labeled as salt, and spices found in the kitchen and samples of the remaining uncooked meat, which had been frozen. Samples of meat from the same lot number from the store at which it was purchased also were obtained. Finally, prescription drugs found in the home were collected for testing. All samples were sent to the Food and

Drug Administration (FDA) for testing, including specific tests for nitrites, cyanide, arsenic, and select hydrocarbons.

Within 48 hours of onset of illness, FDA laboratory testing confirmed the presence of sodium nitrite in all three foods eaten by the group. The meat contained 3,134 parts per million (ppm), the rice 18,792 ppm, and the vegetables 7,440 ppm (upper limits of normal: 1,000-2,000 ppm; acceptable levels in smoked fish: 200 ppm). The substance in the plastic bag labeled "Refined Iodized Table Salt" contained 100% sodium nitrite. Remaining uncooked meat from the household and from the same lot number from the store had negligible levels of sodium nitrite.

Interviews with the patients found that they had moved recently from another residence to the apartment in which they ate the meal. During the move, two of the patients packed food items from the previous residence to use in the new apartment, including the bag labeled as iodized table salt. None could remember purchasing the bag. However, several recalled that another tenant of the initial residence had been involved in curing meats and returned to his country of origin several months earlier. Law enforcement personnel contacted this person and ascertained that he had used sodium nitrite in preserving meat and transferred a portion to the bag labeled as table salt for storage.

Editorial Note: Methemoglobin is produced when ferrous iron is oxidized to ferric iron within a hemoglobin molecule, an effect that inhibits the binding and delivery of oxygen by a red blood cell. Methemoglobinemia occurs when excessive oxidative stress produces methemoglobin at a rate that overwhelms the body's capacity to reduce it through enzyme systems (e.g., nicotinamide adenine dinucleotide [NADH] methemoglobin reductase). Methemoglobinemia is acquired most commonly after ingestion or inhalation of an oxidizing agent, such as nitrates or nitrites.

Sodium nitrate and sodium nitrite are used for their antimicrobial effects to preserve and cure meat, fish, and certain cheeses. They also are used commercially to prevent corrosion of pipes. Epidemics of methemoglobinemia have been associated with drinking water from sodium nitrite-contaminated tanks and pipes. Well water contaminated by nitrogenous fertilizer run-off is an important cause of nitrate-induced methemoglobinemia.

This incident highlights the need to **store and label potentially hazardous materials properly** to avoid unintentional ingestion and the importance of an ongoing working relation among multiple agencies and organizations in the effective and timely response to a potential public health threat.

REF: Morbidity and Mortality Weekly Report, July 26, 2002, 51(29);639-642.

CDC reports declines in many foodborne illnesses in 2001

An estimated 76 million persons contract foodborne illnesses each year in the United States. Centers for Disease Control's (CDC) Emerging Infections Program Foodborne Diseases Active Surveillance Network (FoodNet) collects data about 10 foodborne diseases in nine U.S. sites to quantify and monitor foodborne illnesses. This report describes preliminary surveillance data for 2001 and compares them with 1996--2000 data. **The data show a decrease in the major bacterial foodborne illnesses**, indicating progress toward meeting the national health objectives of reducing the incidence of foodborne diseases by 2010. However, the data do not show a sustained decline in some infections, indicating that increased efforts are needed to reduce further the incidence of foodborne illnesses.

In 1996, active surveillance began for laboratory-diagnosed cases of infection with *Campylobacter, Escherichia coli* O157, *Listeria monocytogenes, Salmonella, Shigella, Vibrio,* and *Yersinia enterocolitica* infections in Minnesota, Oregon, and selected counties in California, Connecticut, and Georgia. In 1997, FoodNet was expanded to include laboratory-diagnosed cases of *Cryptosporidium parvum, Cyclospora cayetanensis,* and hemolytic uremic syndrome (HUS). From 1996 to 2001, the FoodNet surveillance population increased from five sites and a population of 14.2 million to nine sites and 37.8 million persons (13% of the U.S. population).

1996-2001 Comparison

The bacterial pathogens with the highest relative incidence during 1996-2001 were *Campylobacter, Salmonella*, and *Shigella*. Pathogens with lower incidence were *E. coli* O157, *Listeria*, and *Yersinia*. The incidence of infection with most pathogens decreased during 1996-2001. For four pathogens (*Yersinia, Listeria, Campylobacter*, and *Salmonella*), this decrease was observed consistently over several years.

During the 1996-2001 testing period: *Yersinia* infections decreased 49%, *Listeria* decreased 35%, *Campylobacter* decreased 27% and *Salmonella* decreased 15%. The combined estimated incidence of infections caused by all seven bacterial pathogens that CDC surveys dropped 23% since 1996.

Editorial Note: During 1996-2001, incidence of infections caused by *Yersinia, Listeria, Campylobacter,* and *Salmonella* have shown a substantial and sustained decline. The declines in the incidence of foodborne diseases targeted in the national health objectives indicates important progress. However, additional measures will be needed to reduce further the incidence of these diseases to achieve the national health objectives.

Although the incidence of infection has declined for several foodborne diseases, the incidence of foodborne diseases remains high. Efforts to reduce the rate of foodborne illnesses might include steps to reduce the prevalence of these pathogens in their respective important animal reservoirs: cattle (*E. coli* O157), egg-laying chickens (*S*. Enteritidis), and seafood, particularly oysters (*Vibrio*). Implementation of nationwide, consistent, on-farm preventive controls would reduce the risk for human illness from *S.* Enteritidis-contaminated eggs. The increases in infections caused by *S.* Newport, *S*. Heidelberg, and *S.* Javiana and the high incidence of foodborne diseases in children, especially infants, are of major concern. To determine possible risk factors for infections and opportunities for prevention, FoodNet has initiated a case-control study of sporadic cases of *Salmonella* and *Campylobacter* in young children.

The 2001 FoodNet final report will include incidence figures and other information, such as illness severity, and will be available in late 2002 at http//www.cdc.gov/foodnet. Because the population in the FoodNet sites has increased since 2000, final 2001 rates will be somewhat lower than preliminary rates.

REF: *MMWR Weekly*, 51(15);325-9, April 19, 2002.

Annual Smoking-Attributable Mortality, Years of Potential Life Lost, and Economic Costs United States, 1995-1999

Cigarette smoking is the leading cause of preventable death in the United States and produces substantial health-related economic costs to society. This report presents the annual estimates of the disease impact of smoking in the United States during 1995-1999. The Centers for Disease Control (CDC) calculated national estimates of annual smoking-attributable mortality (SAM), years of potential life lost (YPLL), smoking-attributable medical expenditures (SAEs) for adults and infants, and productivity costs for adults. Results show that during 1995-1999, smoking caused approximately 440,000 premature deaths in the United States annually and approximately $157 billion in annual health-related economic losses. Implementation of comprehensive tobacco-control programs as recommended by CDC could effectively reduce the prevalence, disease impact, and economic costs of smoking.

During 1995-1999, smoking caused an annual average of 264,087 deaths among men and 178,311 deaths among women in the United States. Among adults, most smoking-related deaths were attributed to lung cancer (124,813), ischemic heart disease (81,976), and chronic airways obstruction (64,735). Smoking during pregnancy resulted in the death of 599 male and 408 female infants annually. Total annual SAM estimates include the deaths of 589 males and 377 females by residential fire during 1994-1998, and the deaths of 15,517 males and 22,536 females from lung cancer and heart disease attributable to exposure to secondhand smoke.

Editorial Note: During 1995-1999, a total of 442,398 persons in the United States died prematurely each year as a result of smoking. This number, which is higher than previous SAM estimates, reflects the inclusion of 35,053 secondhand smoking-attributable heart disease deaths and slightly higher smoking-related RRs for cancers, respiratory diseases, and infant conditions. The number of smoking-attributable deaths would have been greater if smoking prevalence among men, women, and pregnant women had not declined since the early 1990s.

Cigarette smoking continues to be the principal cause of premature death in the United States and imposes substantial costs on society. For each of the approximately 22 billion packs sold in the U.S. in 1999, $3.45 was spent on medical care attributable to smoking, and $3.73 in productivity losses were incurred, for a total cost of $7.18 per pack. These costs provide a strong rationale for increasing funding for comprehensive tobacco-use interventions to the levels recommended by CDC. In California, decreases in smoking

prevalence have resulted in reduced lung cancer and heart disease death rates. These results offer evidence of the potential benefits of expanding comprehensive tobacco-control programs in an effort to reduce current smoking prevalence by 50% by 2010.
http://www.cdc.gov/mmwr/preview/mmwrhtml/mm5114a2.htm

REF: Morbidity and Mortality Weekly Report, 51(14), April 12, 2002

Revised OP Cumulative Risk Assessment

The Environmental Protection Agency is releasing a revised assessment of the cumulative risks of organophosphate pesticides, and is making the document available for public comment and scientific peer review of the methodologies used in its development. With this groundbreaking work, EPA is nearing completion of a process to evaluate over a thousand organophosphate pesticide food tolerances (legal residue limits), virtually all of which are expected to meet the highest, most rigorous safety standards.

"Preliminary results from this scientific assessment provide good news for American consumers," said Stephen L. Johnson, EPA's Assistant Administrator for the Office of Prevention, Pesticides, and Toxic Substances. "After years of effort to develop the scientific methodologies to conduct this sort of sophisticated risk assessment, the conclusions strongly support a high level of confidence in the safety of the food supply," he continued.

This announcement is another major milestone representing years of scientific work, numerous scientific and public meetings, and a thorough regulatory process to ensure these pesticide tolerances meet the tough food safety standard called for in the Food Quality Protection Act of 1996. In the last several years, EPA has taken a variety of regulatory actions on the organophosphates pesticides, ranging from lowering application rates to complete cancellation of specific uses. These actions have substantially reduced the risks, and have contributed to the high level of safety found in the cumulative risk assessment. The revised assessment underscores EPA's continued confidence in the overall safety of the nation's food supply and the benefits of eating a varied diet rich in fruits and vegetables.

The cumulative risk assessment methodologies, developed since 1996 with extensive expert scientific peer-review and public involvement, represents a significant advance in EPA's ability to assess risks stemming from potential exposure to pesticides. The Agency is still working to evaluate certain food and residential uses of individual organophosphates where additional risk mitigation will likely be necessary. In the next several weeks, EPA will continue the scientific and regulatory work to evaluate and address these potential risks. In addition, the cumulative exposure assessment shows that drinking water is not a significant contributor to overall risk.

In this risk assessment, EPA has evaluated potential exposures to 30 organophosphates, taking into account food, drinking water and residential uses. EPA has employed methodologies to account for variability in potential exposures based on age, seasonal and geographic factors. The assessment relied on a large variety of data sources, such as monitoring data that measure pesticide residues found in food, in order to obtain the most realistic estimates of actual exposure to the population from organophosphate pesticides. The assessment includes consideration of the FQPA safety factor for protecting sensitive populations, including infants and children. In addition, issuance of this document meets our legal obligations under the Natural Resources Defense Council consent decree for issuing a revised cumulative risk assessment for the organophosphate pesticides.

The Executive Summary, Questions and Answers, Summaries, as well as the detailed Scientific Chapters, will be available at: http://www.epa.gov/pesticides/cumulative.

REF: http://www.epa.gov/pesticides/cumulative/rra-op/pr.htm

Toxicology Tidbits

Salmonella Newport: California

Following an increase in Salmonella Newport illnesses in Northern California, the California Department of Health Services (CDHS) issued a public warning about the dangers of consuming illegally manufactured soft-style cheeses, such as queso fresco and crema fresca, which often are made with raw unpasteurized milk and may be contaminated with harmful bacteria. More than 50 cases of Salmonella Newport have been reported since December, predominantly in Latino communities in Alameda, Fresno, Monterey, San Mateo, Santa Clara, Stanislaus and Tulare counties. No deaths have been reported, but hospitalization has been required in several cases. The investigation into these cases is continuing. Previous outbreaks of Salmonella have been associated with these illegally manufactured cheeses popular in Latino communities. Consumers are strongly warned against buying cheese from street vendors and are urged to check the label on pre-packaged cheese.

REF: Office of Public Affairs Press Release, California Department of Health Services, 29 March 2002.

Pesticide residues in conventional, integrated pest management (IPM)-grown and organic foods: insights from three US data sets

An analysis of pesticide residue data was performed to describe and quantify differences between organically grown and non-organic fresh fruits and vegetables. Data on residues in foods from three different market categories (conventionally grown, integrated pest management (IPM)-grown/no detectable residues (NDR), and organically grown) were compared using data from three test programs: The Pesticide Data Program of the US Department of Agriculture; the Marketplace Surveillance Program of the California Department of Pesticide Regulation; and private tests by the Consumers Union, an independent testing organization. Organically grown foods consistently had about one-third as many residues as conventionally grown foods, and about one-half as many residues as found in IPM/NDR samples. Conventionally grown and IPM/NDR samples were also far more likely to contain multiple pesticide residues than were organically grown samples. Comparison of specific residues on specific crops found that residue concentrations in organic samples were consistently lower than in the other two categories, across all three data sets. The IPM/NDR category, based on data from two of the test programs, had residues higher than those in organic samples but lower than those in conventionally grown foods.

REF: *Food Additives & Contaminants* 19(5), May 01, 2002.

FDA-FCC Cellular Phone and RadioFrequency Energy Website

The Food and Drug Administration (FDA) and the Federal Communications Commission (FCC) have established a joint website, Cell Phone Facts, to provide consumer information regarding cellular phones and radiofrequency (RF) energy. This website provides the public with information from both government agencies involved in the regulation of cell phones (also known as wireless, mobile, or PCS phones) and their base stations. It provides a review of how cell phones work and answers questions raised about their safety. It also includes a link to the FCC's website that contains additional information about radiofrequency safety as it relates to other sources of RF energy.

Most of the concerns about cell phone safety involve the phone's production of RF energy from a source close to the head or body of the user. The website explains that although cell phones use RF to transmit calls, the FCC limits the amount of RF energy that may be produced by a cell

phone to safe levels and the levels permitted are far below the levels determined by scientific experts to have the potential for an adverse effect on humans. It also observes that while no scientific evidence has been published demonstrating harm from short-term exposures to low levels of RF energy, studies are now underway to look at the possible risks of long-term exposures. The results of any such studies will also be posted on the website and both agencies will take follow-up action as appropriate.

The new website summarizes the government's safety standards for cell phones and describes the role of each agency in RF safety regulation. It also explains what RF energy is, how it is used, and how it is measured; how the current safety standards were established; the role of local and state governments; and where to obtain additional information on related topics from other sources. The FDA and the FCC will periodically update the website in response to queries and comments received from the public and as new information becomes available.

The FDA-FCC RF safety website is available for public use and comment at www.fda.gov/cellphones and www.fcc.gov/cellphones

Childhood Cancer and Agricultural Pesticide Use: An Ecologic Study in California

This study analyzed population-based childhood cancer incidence rates throughout California in relation to agricultural pesticide use. During 1988-1994, a total of 7,143 cases of invasive cancer were diagnosed among children under 15 years of age in California. Building on the availability of high-quality population-based cancer incidence information from the California Cancer Registry, population data from the U.S. Census, and uniquely comprehensive agricultural pesticide use information from California's Department of Pesticide Regulation, the researchers used a geographic information system to assign summary population, exposure, and outcome attributes at the block group level. The researchers used Poisson regression to estimate rate ratios (RRs) by pesticide use density adjusted for race/ethnicity, age, and sex for all types of childhood cancer combined and separately for the leukemias and central nervous system cancers. **The researchers generally found no association between pesticide use density and childhood cancer incidence rates.** The rate ratios (RR) for all cancers was 0.95 [95% confidence interval (CI), 0.80-1.13] for block groups in the 90th percentile and above for use of pesticides classified as probable carcinogens, compared to the block groups with use of < 1 lb/mi2. The RRs were similar for leukemia and central nervous system cancers. Childhood leukemia rates were significantly elevated (RR = 1.48; 95% CI, 1.03-2.13) in block groups with the highest use of propargite, although the researchers saw no dose-response trend with increasing exposure categories. Results were unchanged by further adjustment for socioeconomic status and urbanization.

REF: Environmental Health Perspectives 110(3), March 2002.

An Outbreak of Typhoid Fever in Florida Associated with an Imported Frozen Fruit

An outbreak of typhoid fever in Florida involving at least 16 persons during the winter of 1998-99 was investigated using case-control, environmental, and laboratory methods. The genomic profiles of *Salmonella* serovar Typhi (*Salmonella* Typhi) isolates from the 15 confirmed case subjects were identical. Consumption of fruit shakes made with frozen mamey, a tropical fruit, was significantly associated with illness (matched odds ratio, 7.6; 95% confidence interval, 1.481.4). Laboratory testing showed that the fruit was heavily contaminated with fecal coliforms; no *Salmonella* Typhi was isolated. The frozen mamey was prepared in plants in Guatemala and Honduras. No further cases occurred after the frozen product was recalled. As our nation's food sources
become increasingly globalized, the risk of outbreaks of exotic diseases linked to contaminated imported food will increase. This outbreak

highlights the need for new approaches to ensure the safety of our food supply.

REF: *Journal of Infectious Diseases*, 2002;186:234-239.

New newsletter

Check out "**Pesticide Wise**" from the University of California Riverside. A Quarterly Publication of the Department of Environmental Sciences By Dr. Jay Gan. http://www.pw.ucr.edu/PesticdeWise.asp

VETERINARY NOTES.....

Pentobarbital in Dog Food

The low levels of sodium pentobarbital that dogs might receive through their food are unlikely to cause any health problems, according to an FDA study.

Pentobarbital is an anesthetizing drug used for dogs and other animals, such as horses and cattle. Because it is also widely used for humane euthanasia of dogs, cats and other animals, the most likely way that pentobarbital could get into dog food would be in rendered animal products. Rendered products come from a process that converts animal tissues to feed ingredients.

During the 1990s, the FDA's Center for Veterinary Medicine (CVM) received reports from veterinarians that pentobarbital seemed to be losing its effectiveness for anesthesia in dogs. Based on these reports, the Center decided to investigate the theory that the dogs were exposed to pentobarbital through dog food, and that this exposure was making them less responsive to pentobarbital when it was used as a drug.

CVM developed and used a sophisticated process to detect and quantify minute amounts of pentobarbital in dog food. Upon finding pentobarbital residues in some samples of dry dog food, CVM scientists conducted further tests that led them to conclude that dogs eating dry dog food are unlikely to have any adverse health effects from the low levels of pentobarbital found in the dog food samples tested.

CVM scientists also developed a test to detect dog and cat DNA in the protein of dog food. Since pentobarbital is used to euthanize dogs and cats at animal shelters, finding pentobarbital in rendered feed ingredients could suggest that pets were rendered and used in pet food. Test results indicated a complete absence of protein material that would have been derived from euthanized dogs or cats. As a result of their study, CVM scientists assume the source of the pentobarbital in dog food is cattle or horses euthanized and then rendered.

After finding that the low levels of pentobarbital that dogs might receive through food are unlikely to cause them any adverse health effects, FDA officials did not think that further research into the issue was necessary. CVM officials say they plan to publish the study findings in peer-reviewed scientific journals.

CVM's studies and a summary report of the results are available on the CVM home page.

REF: *FDA Veterinarian,* May/June 2002.

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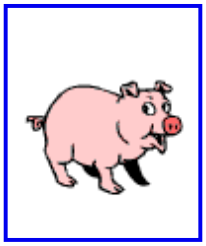

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