

PENNSTATE



College of Agricultural Sciences

From the Department of Dairy and Animal Science

This regular column from Penn State's Department of Dairy and Animal Science features the research findings, student opportunities, and reports on other important topics generated in the Department. The back issues of the column are archived on Lancaster Farming's Internet www.lancasterfarming.com home page. Look for them.

Are Producers Responsible for Food Safety?

William R. Henning
Extension Meat Scientist
Penn State

The past few years have been filled with news stories about the safety of our food supply. Recently, the safety of livestock and livestock management practices have been questioned by some food safety experts. In attempting to prevent food borne illness caused by meat and poultry, the Food Safety Inspection Service (FSIS) of the United States Department of Agriculture (USDA) has implemented a program called HACCP, an acronym for Hazard Analysis and Critical Control Points.

HACCP is designed to eliminate, control or reduce to an "acceptable level" any food safety risk, including pathogens. The program is designed to help processors, packers and distributors establish preventative and control methods at all "critical" points in the handling and processing of meat and

poultry products and to keep records to prove these procedures are being followed. First implemented in January of 1998 by the largest processors, final implementation will be accomplished by January 2000 by the "very small" processors.

In addition to the HACCP program, FSIS inspectors have significantly increased sampling for Salmonella and E. coli O157.H7 on carcasses and in fresh retail ground beef. Regulations are currently being formulated for testing programs for Listeria in cooked meat and poultry products. There is no doubt that intensified inspection has helped identify problem areas and improve process methods, but the industry has recently experienced more recalls for pathogens than ever.

Why so many recalls? Processing plants and regulators have increased the sampling rate to the point where it is assured that some pathogens will be found. Secondly, the testing procedures are much more sensitive. New methods allow the recovery and detection of

pathogens much more efficiently than just a few years ago.

Does this mean that food, especially meat and poultry, is less safe than before? Not at all! It means that the industry and government regulators are raising the awareness of all processors and handlers of foods, including consumers.

The USDA plans to incorporate a "FARM TO TABLE" approach to food safety in addition to many of the traditional inspection methods. This "Pre-Harvest" component will place more responsibility on the individual producer for food safety, but no one has clearly defined the control methods.

As an industry, the livestock and poultry sectors have done an excellent job over the past few decades to prevent diseased, unwholesome meat or chemically contaminated meat from entering the food chain, but this is not enough to satisfy some consumers or regulatory officials.

One aspect that remains somewhat controversial is the role animal production practices play in food safety. Some FSIS spokespersons are suggesting that animal production should be part of a slaughter plant's HACCP plan, yet no clear answers are available of how this will be accomplished.

There seem to be two separate issues that may or may not be controlled at the farm; pathogens and residues.

To understand how producers can have a role, it is important to understand how pathogens get into meat.

- Environmental pathogens, which cause disease in humans, abound widely in the environment, especially in the soil.

- Pathogens which cause disease in humans do not usually exhibit any visible effects in the animal which may be infected (the exception is a rare Salmonella called DT104)

- Infected animals do not have infected meat! When meat becomes infected, it is generally due to the transfer of pathogens from the hide or hair of the animal to the surface of the carcass during processing (mainly hide removal). Pathogens can also come from the intestinal content of infected animals but this is generally well controlled in packing plants.

- Extremely dirty animals can increase contamination of the carcass, although the effect is not as large as once thought.

- Animals that are not internally infected with these pathogens can get infected manure on their hide during the marketing process from dirty trucks and pens at sale barns or packing plants. They can even get pathogen-infected manure on their hide by being shipped on the same truck with an infected animal.

FSIS has considered attempting to control pathogens at the farm level but there are no clear answers of how this might be done. Some research is being done with vaccines and even innoculants of bacteria that compete against pathogenic E. coli. Those methods show

promise but do not prevent contamination by the manure of untreated *journal* animals during marketing. Although reported in one scientific and the popular press, several subsequent research trials showed that feeding hay to cattle prior to slaughter DOES NOT reduce the incidence of pathogenic E. coli in cattle but, in fact, may increase shedding of the bacteria into the manure.

Meat packers have been very aggressive in attempting various procedures to control pathogens. Such techniques have involved washing, shaving, sterilizing and even dehairing beef carcasses prior to removing the hide. Currently, the National Cattlemen's Beef Association (NCBA) is funding research on dehairing of beef cattle prior to removing the hide. This process involves application of a caustic (much like "Nair") to remove all the hair. The caustic also kills pathogens on the surface of the hide and provides a relatively sterile environment during hide removal.

Packing plants have also developed several "hurdles" to reduce the number of pathogens on the carcass after processing, including improved procedures in dressing, mild acid rinses, hot water washes and steam "pasteurization cabinets". Each of these procedures make small reductions of pathogens and can be additive in their effect. This is what the industry calls "Multiple Hurdle" techniques to improve

(Turn to Page A32)

Randall G. Renninger

Certified Public Accountant
Specializing in agriculture and construction industries
"We help business people discover ways to cut costs, save taxes, and be more profitable"
Call about our FREE seminars

535 W. Orange Street, Lancaster, PA 17603
(717) 299-6480 ♦ Fax (717)299-6390

"The CHI MACHINE"

5 Minutes is equal to a 4 mile walk!

Over 150,000 CHI MACHINES being sold EVERY MONTH!

100% Money Back Guarantee!

The Sun Harmony Chi Machine is backed with 38 Years of Experience & Research With Medical Patents.

Erich from Colorado: "I am over 60 years young. I use the CHI MACHINE 8 to 10 minutes twice a day. I have relief from the pain and stiffness of arthritis, bad knees, legs, ankles and back."

Testimony, Information & Training Meeting

Quality Inn, 2363 Oregon Pike, Lancaster
Sat., April 15 - 9:00 am - 3:30 pm

717-656-6408 or 1-800-237-0400

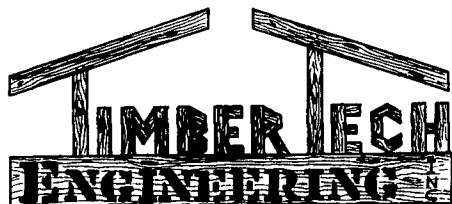
Dr. Michael Fuller or Ginny Fuller
93 W. Main St. (Rt. 23), Leola, PA 17540
Visit us on the internet at www.chi4life.com/ginny



It Does The Work... You Get The Benefits!

- Lose Weight
- Relieves Stress
- Relaxes Muscles
- Improves Circulation
- Increases Energy
- Improves Muscle Tone, Joints and Ligaments
- Improves Digestion and More!

"Let Us Assist You In The Design Of Your Next Building Project."



Timber Tech Engineering, Inc.
CONSULTANT ENGINEERS
254 W. Franklin Street
Womelsdorf, PA 19567

(610) 589-4589
(610) 589-5384 FAX

BUILDING & FACILITIES PLANNING

LEBANON VALLEY ENTERPRISES, INC.
Manufacturing • Powder Coating • Precast

- X All 13 ga 1.9" OD steel tubing construction for strength and durability
- X 20 year rust thru guarantee
- X Baked on high gloss, high impact and acid resistant TGIC polyester powder coating
- X Custom sizes available up to 20'
- X Available in 3 heights: 38" 4 bar, 48" 5 bar, 54" 6 bar
- X High Quality
- X Affordable Prices
- X Stub or spring bolt latch for gates
- X Available for pastures and corrals



GATES & FENCING

P.O. Box 187, Myerstown, PA 17067 • (717) 866-2030

Call us for your nearest Dealer!