

California Poultry Letter

University of California • Cooperative Extension

July-September 2002

Biosecurity in the Egg Processing Plant

It's All About Traffic and Hygiene

In the context of biosecurity, egg processing rooms and coolers are considered dirty areas because processing plants handle eggs from all flocks on the farm and may receive eggs from other farms. Processing plants are a melting pot, receiving eggs and equipment (pallets, racks and flats) from multiple sources, all of which could potentially bring infectious disease agents into one central location. Any and all traffic, direct or indirect, between the processing plant and chicken flocks should be considered a significant hazard and should be either avoided, or interrupted by thorough and effective cleaning and disinfection.

Parking

Ideally processing plant visitors, inspectors and employees should park their vehicles off site in order to minimize the risk of carrying disease agents onto the premises. Parking areas that are paved, have gravel or some other surface that does not accumulate water will minimize pathogen survival and, therefore, limit risk.

Plant Visitors

The soles of shoes should be disinfected upon entering the processing plant and covered with impermeable foot covering. In addition, hands should be sanitized with soap and hot water and clean protective outerwear should be donned, including a head covering. All protective clothing

should be provided by the processing plant and *not* transported by the visitor. Under ideal conditions, a second shoe sanitation should be done before actually entering the processing area. When leaving the plant, the visitor should reverse the entry procedures, and leave the protective clothing at the plant.

It is always a good idea to require all visitors to log in and out including the date and time of the visit. No one should be allowed to visit more than one plant per day, therefore, all visitors should be asked whether they have been to another plant or production facility that day.

Egg Inspectors

Egg inspectors that frequently visit the plant should be provided a place (locker or something similar) to leave their protective clothing for re-use and also the equipment they use (clipboards, pencils, forms, etc.). Clipboards, pencils and forms should not be used in or transported to other processing plants. Scales and other equipment that must be transported between processing plants by inspectors should be wiped down with sanitary cloths between uses and transported in clean plastic bags or disinfected containers.

Egg plant visitors and inspectors should *never* go from the processing side of the farm to the production side because of the

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risk of transmitting pathogens to the chicken flock. If it is necessary for a visitor to go to both production and processing, they should visit the production side first before entering the processing plant.

Egg Flats

Egg flats are a potential source of bacterial and viral pathogens and therefore should be sanitized between uses. Plastic flats should be washed in hot water with a detergent to remove any organic material, and then disinfected with a sanitizing agent. Most flat washers do not operate at high enough temperatures for a long enough time to kill all pathogens, such as the Avian Influenza virus; therefore the use of chlorine or some other suitable disinfectant is essential for sanitation. It is important not to over-fill the flat washer with flats so that adequate water penetration between all flats is achieved. All sanitizing agents are neutralized by organic material, making frequent changing of the rinse water an essential component of flat sanitation. During periods of high risk, when a pathogen is known to exist, a second wash cycle should be considered.

After the flats have been washed and sanitized, they should be stored in a clean environment to avoid recontamination. Stacking clean egg flats on racks or pallets that have not been sanitized should be avoided to prevent cross contamination. It is best that the sanitized egg flats be returned to their original source and not commingled with flats from other sources. If the processing plant receives eggs from multiple farms and or companies, using colored flats can help to keep flats from multiple sources separate.

Egg Racks, Trolleys and Pallets

Except for in-line collection systems, eggs are transported to the processing plant on racks, trolleys or pallets, all of which have had contact with the production facility. This equipment must be considered contaminated with whatever pathogens exist on the farm and therefore should be cleaned and disinfected between uses.

The sanitation of racks, trolleys and pallets should include at least two steps, cleaning and disinfection. High pressure washing with a detergent capable of removing adherent organic material should always precede the final step of disinfection. All organic material must be removed paying particular attention to wheels and under surfaces of the equipment. If available, steam cleaning can be very effective at removing organic material such as dried egg yolk. If steam cleaning is used, the application of high temperature grease may be necessary to keep wheels well lubricated.

Following cleaning, the equipment should be disinfected using a registered material applied according to the label directions. The disinfectant should be thoroughly applied to all surfaces of the equipment, and then allowed to air dry before equipment is returned to the production facility. As with egg flats, the sanitized equipment should be stored in a clean environment away from the processing plant and resident farm traffic patterns to prevent re-contamination. Racks, trolleys and pallets should be clearly identified (paint or other means) in order to minimize the likelihood of co-mingling of equipment from multiple sources. All equipment should be returned to the original source farm, and should not be shared with other farms.

Incoming Cooler Management

Many processing plants bring eggs in from multiple sources. Unprocessed eggs can carry dust, feathers and feces on their surfaces and can be a significant source of pathogens. If the processing plant is located on a farm that has all or part of its production off-line, this presents a significant challenge to prevent the transmission of a pathogen from off farm sources to resident birds. One of the keys to lowering the risk of disease exposure is to isolate off-line farm eggs from the eggs coming from other farms in the incoming cooler. The employee who brings the off-line eggs into the receiving cooler will go back and forth between production and processing. Therefore, it is essential that he or she not come in contact with eggs from other farms.

The best way to prevent employees from becoming contaminated is through the separation of equipment (racks, trolleys or pallets) and traffic patterns. Ideally, there should be two separate entrances to the cooler, one for off-farm eggs and one for on-farm eggs, and the eggs should be stored in separate locations within the cooler. However, this is not possible in many plants. One California producer has designated two areas of the cooler separating off-farm from on-farm eggs by painting lines on the floor that show employees where to locate incoming deliveries. Other methods that have been used are fences, temporary partitions and walls. Whatever the system, it should be easy to use so that employees will follow the prescribed traffic pattern.

Rodent and Insect Control

Rodents and insects can be an important source of pathogens. They can transmit diseases mechanically (on their bodies) or biologically (within their bodies), therefore their control is important to general plant sanitation and disease prevention. Exclusion of these pests is a first line of defense and the most cost efficient method of control.

Exclusion requires the use of several common sense methods including closing doors tightly, air curtains and traps.

The first point of exclusion of rodents is the outside perimeter of the egg processing building. One excellent aid is to lay down a 5- to 10-yard perimeter of 2-inch aggregate gravel or other suitable material so that there is a relatively large open space that rodents travel across to reach the building. Rodents prefer not to cross open spaces because they are vulnerable to animals of prey. In addition to the open perimeter, live traps can be placed approximately 15 ft. apart and at doorways into the plant. All doors to the plant should fit tightly because mice and rats can squeeze through one-fourth and one-half inch openings, respectively.

Rodent control within the plant usually involves the use of traps and rodenticide baits. Only CDFA or USDA approved rodenticides are allowed for use in processing plants. Traps and baits should be placed along walls in all rooms of the plant, especially in the dry storage area.

Effective control programs for flies and other insects require the elimination of breeding habitat and the elimination of food sources. Organic matter such as manure and decomposing vegetation are excellent breeding habitats and should be removed from the building perimeter. Keeping doors closed and the use of air curtains can be effective mechanical barriers to prevent insect access to the interior of the plant. Good general sanitation in the plant will significantly reduce the risk of attracting insects. Pesticides approved by CDFA or USDA can also be applied within the plant.

*Doug Kuney
Poultry Farm Advisor*

Poultry Information From the Internet

As technology improves, the cost of computer equipment and internet access continues to decrease. Most farmers now have access to the internet and are learning how to get useful information from this source. If you are a new internet user you will find that there is more information available on-line than you could read in 100 years. You need to be selective and find sites that can provide you with the specific information that you need. We have developed a web page with about 1400 poultry publications and other documents. These were developed specifically with California conditions in mind. You can search this site using key words to find information on specific topics.

Our web address is:

<http://animalscience.ucdavis.edu/avian/>

We have recently added 68 back issues of our *Egg Economics Update* newsletter written by Don Bell, that contain information of interest to the egg industry. In the future we will be adding back issues of the *California Poultry Letter* that we feel have useful information of long term value.

Finding Information on Our Site

A keyword search of this site is the easiest way to find information on a specific subject. Click on **SEARCH** in our homepage to go directly to the UC Davis homepage that features an excellent search engine. This will allow you to search our information and all of the publications and documents available on the campus site. To demonstrate this I did a key-word search using the words "pullet costs." This search took 0.04 seconds and returned 38 references with information on this topic.

The January issue of the *California Poultry Letter* contained an extensive discussion about "Electronic Communication and Information Retrieval in Today's Poultry Industry." That extensive discussion is available at: <http://animalscience.ucdavis.edu/avian/>

Links to Other Sites

Our home page also has an extensive list of other internet sites where you can find valuable poultry information. Look at the home page menu for "Interesting Web Sites." Here are a few examples of what you can find there. The University of Georgia site has poultry software that you can download free. The Auburn University site contains extensive information about poultry housing and ventilation. The Purdue University site has an extensive list of general poultry leaflets from many universities. Many federal agencies have information on poultry and several of these are listed. We also have links to the sites for most local and national poultry organizations and to California poultry or egg production companies that maintain web pages.

E-Mail List

We maintain an e-mail list of people who are interested in new poultry information released by the University of California. Anyone can be added to this list by contacting Ralph Ernst at: raernst@ucdavis.edu. Subscribers must notify us of address changes if they wish to continue receiving E-mail release notifications.

Ralph A. Ernst
Extension Poultry Specialist

CEQAP Notes

The industry/agency team that provides the direction for CEQAP has not met since 5/8/02. However, the program continues to operate effectively and a team meeting is planned sometime later this fall. The program steering committee has started the development of a set of By-Laws to guide program procedures in the future. The first draft of the By-Laws has been prepared by Program Coordinator David Goldenberg and distributed to the Steering Committee for review.

The CEQAP handbook has been revised and the new version is available from Debbie Murdock at PePa, 1521 I St., Sacramento CA 95814; phone 916-441-0801; E-mail <dmurdock@cgfa.org>. Three individuals have completed CEQAP training during the first half of 2002.

I attended a recent meeting of the "California Inter-Agency Food Safety Team" held on the Davis campus. During the entire meeting no one mentioned *salmonella enteritidis* or eggs! We must be doing something right.

Ralph Ernst
Extension Poultry Specialist

2002 Calendar

September 22-23

California Poultry Federation Annual Board of Directors Meeting and Conference, Double Tree Hotel, Monterey. Contact CPF at (209) 576-6355 or email califpoultry@cs.com

October 7-8

Summit on Environmental Issues Facing the Egg Industry, Savannah, GA. This will be put on by Egg Industry Magazine and will be held immediately prior to the annual meeting of the United Egg Producers. Information is available at: <http://www.wattnet.com/summit6/progrm6.cfm?pg=1>

October 28-30

National Poultry Waste Management Symposium, Sheraton Birmingham Hotel, Birmingham, AL. Printed programs are available from Ralph Ernst or on the web at: <http://animalscience.ucdavis.edu/Avian/NPWMSPROG302.htm>.

Visit our Website at:

<http://animalscience.ucdavis.edu/avian>

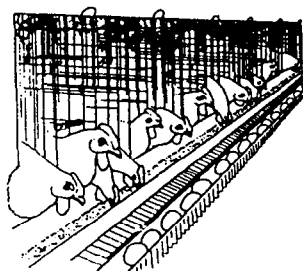
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