

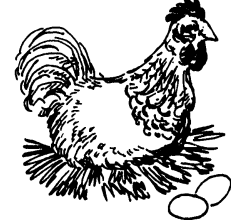


The University of Georgia

Cooperative Extension Service

College of Agricultural and Environmental Sciences / Athens, Georgia 30602-4356

SEPTEMBER 2009



COMMERCIAL EGG TIP . . .

DECREASE YOUR WATER USE AND INCREASE YOUR BOTTOM LINE

In 2008, Georgia commercial egg plants processed almost 14 million cases of table eggs (USDA, 2009). A survey of water use in U.S. shell egg processing facilities in 2005 showed that on average shell egg plants utilize 1.5 gallons of water per case, with 36% of plants reporting using less than 1 gallon per case and 30% utilizing over 2 gallons per case (Jones and Northcutt, 2005). This wide variation in water use indicates that significant opportunities exist to increase efficiency of water use, decrease wastewater generation, and increase a commercial egg processor's bottom line.

Interestingly, statistical analysis of the data collected in the 2005 survey showed that neither the region of the U.S. where the plant was located, the size of the facility, nor the type of operation (in-line, off-line or mixed) affected the average gallons of water used to process a case of eggs. Survey data analysis showed that water use was not related to the length of the processing day nor to the number of days the plant operated per week. Neither the age of the facility or the equipment, or manufacturer of the equipment had an influence on water use. Not even the addition of a flat washer or frequency of sanitation operations had any effect on average water use. So what accounts for the wide variation in water use at commercial egg plants? One answer to this question lies in understanding water loss and its affect on efficient water use.

Total Water Use can be divided into Intended Water Use and Water Loss. That is, once water passes through your plant's water meter (and you pay for it) a certain portion of the water makes it to its intended use, while another portion is lost. The most common examples of Water Loss are leaks. Although leaks tend to be viewed as a simple nuisance that require more dollars to fix than stopping the leak would save, their impact on total plant water use and your bottom line shouldn't be overlooked. And the frequency and volume of leaks varies widely by location.

PUTTING KNOWLEDGE TO WORK

A simple worksheet has been developed for you to quickly assess the fiscal impact leaks in your plant have on your bottom line. Using a free internet-based [“Waterwiser Drip Calculator”](#) program, copies of this worksheet can be utilized throughout your plant to start saving water today.

References:

USDA, 2009. Chicken and Eggs: 2008 Summary. Pou 2-4(09). National Agricultural Statistics Service, U.S. Department of Agriculture, Washington, D.C.

Jones, D.R. and J.K. Northcutt, 2005. A survey of common practices in shell egg processing facilities and water use. International Journal of Poultry Science 4(10): 734-736.

Waterwiser Drip Calculator Worksheet

(Go to mountairy.org/201/Water-Wiser-Drip-Calculator or
Enter “Waterwiser Drip Calculator” into any internet search engine)

Task 1: Dripping Leaks (Measurement: Drips per Minute)

At any location in your facility where a dripping leak is discovered (a leak where the drops can be counted):

1. Count the number of drops for 1 minute and record in the table below (Location 1)
2. Repeat for all dripping leaks in plant
3. Enter drip counts in *WATERWISER* program and record Gallons Lost per DAY, MONTH, and YEAR
4. Use the Gallons Lost per YEAR data to complete cost table

Volume:

Locati on	# of Drips per Minute	Gallons Lost Per DAY	Gallons Lost Per MONTH	Gallons Lost Per YEAR
<i>Examp le</i>	60	8.6	259	3154
1				
2				
3				

Cost:

Locati on	Gallons Per YEAR	Divided by 1000	Cost (\$) Per 1000*	Cost Per YEAR
<i>Examp le</i>	3154	$\sqrt{1000} = 3.154$	x \$ 10.00	= \$ 31.54
1		$\sqrt{1000} =$	x \$	= \$
2		$\sqrt{1000} =$	x \$	= \$
3		$\sqrt{1000} =$	x \$	= \$

Task 2: Stream Leaks (Measurement: Seconds to fill 8 oz.)

- Repeat procedures from Task 1 except count seconds required to fill an 8 oz. cup

Volume:

Location	Seconds to Fill Cup	Gallons Lost Per DAY	Gallons Lost Per MONTH	Gallons Lost Per YEAR
Example	15	360	10,800	131,400
1				
2				
3				

Cost:

Location	Gallons Per YEAR	Divided by 1000	Cost (\$) Per 1000*	Cost Per YEAR
Example	131,400	$\div 1000 = 131.4$	$\times \$ 10.00$	$= \$ 1,314.00$
1		$\div 1000 =$	$\times \$$	$= \$$
2		$\div 1000 =$	$\times \$$	$= \$$
3		$\div 1000 =$	$\times \$$	$= \$$

***Be sure amount entered includes both water and sewer costs combined**


Extension Poultry Scientist

Extension County Coordinator/Agent

Consult with your poultry company representative before making management changes.

“Your local County Extension Agent is a source of more information on this subject”