

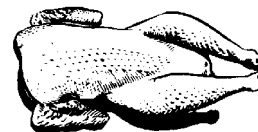


The University of Georgia

Cooperative Extension Service

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

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PROCESSING TIP . . .

MEASURING YIELD BY WASTEWATER ANALYSIS

Because a significant amount of product can be lost to the wastestream, analysis of wastewater can be used to measure lost product.

To determine product lost to the waste stream, two types of data need to be collected. These data include:

Flow volume in gallons; and

The concentration of organics in that volume of wastewater

Based on these data, pounds of product lost to the waste stream can be calculated using the pounds equation. The pounds equation is as follows:

$$\frac{\text{gallons of water}}{1,000,000} \times 8.34 \times \text{wastewater analysis in milligrams per liter (mgL)} = \text{pounds}$$

Volatile solids (VS) measures the concentration of dry weight organics in wastewater.

Using VS as a measure of organic concentration, the pounds equation will determine product loss.

PUTTING KNOWLEDGE TO WORK

The University of Georgia and Ft. Valley State College, the U.S. Department of Agriculture and counties of the state cooperating.
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Example Problem:

	<u>Plant A</u>	<u>Plant B</u>
Pounds live weight processed per day	1,250,000	1,250,000
Gallons of water 250,000 birds @ 5lb./bird	2,000,000	2,000,000
Concentration of VS (mg/L)	1,800	3,000
Pounds dry weight organics	30,024	50,040
Pounds chicken @ 70 percent water	100,080	166,800

Using this calculation, Plant B discharges 66,720 additional pounds (33.4 tons) of product into the wastewater each day. This 66,720 pounds of additional product in the wastewater represents a 5.3 percent difference in processing yield (carcass and offal).

Even at an offal value of 2 cents per pound, this represents a daily loss of \$1300.

Wastewater analysis is generally considered to be in the realm of environmental management; however, analysis of the concentration of organics in the wastewater can determine the amount of product that is lost. By determining those times and processes that lose excessive product to the wastewater and improving them, profitability can be improved.



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County Extension 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.”