



Worthwhile Operational Guidelines & Suggestions

BROILER PROCESSING TIMELY INFORMATION – JUNE 2008

Chicken fat as fuel?

With crude oil prices above \$125 a barrel, waste chicken fat has become a viable alternative energy source. Inedible chicken fat recovered from the processing plants represents a plentiful and economical energy source that can be used in oil burning furnaces and boilers or incorporated into blended diesel products. The heating value of chicken fat (about 17,000 BTU) equates to about 90% to that of petroleum based #2 diesel fuel. Quality chicken fat (i.e., oxidative stability and low free fatty acid content) may be important in order to obtain a high energy value. There are three main sources of waste fat in the poultry processing plant: the offal (about 10%), saddle fat (about 40%) and leaf fat (about 75%). These fat sources can be harvested manually or mechanically, thermally (i.e., steam) processed and then filtered to separate water and other solids. Capital investment is estimated to be low for an on-site recovery system, which typically consists of steam-jacketed kettles and a filtration system. Energy input into this type of a system is about 20% of that recovered. In plant processing million broilers a week, about 120,000 lbs of leaf fat alone can be recovered (based on average 6 lb live-weight; 2% leaf fat yield). This represents about 2,040,000,000 BTU of energy per week that can be used to substitute other fossil fuels on-site to reduce the plant energy costs.



(Additional information: www.engr.uga.edu/service/outreach)



Contact: S. F. Bilgili, Ph.D.
(334) 844-2612
bilgisf@auburn.edu
Poultry Science Department
Auburn University, Auburn, AL 36849
www.ag.auburn.edu/dept/ph/

