

Poultry slaughter, waste water management and fish feed

DIFS, Intan Anindita Suseno, Elisa Masimpan, Eko Sugeng Pribadi, Ferry Leenstra, August 2016.

During poultry slaughter several by-products are produced that can be a valuable resource, if handled properly. If by-products are seen as waste, they will not be handled properly and these by-products will end up in the environment, either directly or as part of the waste water from the slaughter plant.

The most important by-products are blood, feathers, intestinal content, birds arriving dead at the slaughter facility, and discarded parts of birds. Feathers are collected almost always. A rule of thumb is, that from the remaining by-products the blood is about 50% of the total waste burden, while manure, intestinal content and fat and other small parts released during slaughter are the other 50%. 5% of the total live weight of slaughtered broilers is blood. When 1000 broilers are slaughtered (average live weight 1400g) there is about 70 kg of blood produced.

Two students of IPB, Intan Anindita Suseno and Elisa Masimpan, guided by Dr. Eko Sugeng Pribadi of Centras (eko.spribadi@yahoo.co.id), examined waste treatment in small slaughter plants and in slaughter points. They visited and interviewed two small slaughter plants (Bubulak Poultry Slaughterhouse in Bogor City and Cibinong Poultry Slaughterhouse in Bogor District) and three slaughter points (TPA Berkah Putra, TPA Kusman, and TPA Putra Farm).

The impression was that these facilities are generally representative for the majority of small slaughter plants and slaughter points. Results of the study indicate that in small slaughter plants and slaughter points dead chickens, blood, intestinal content, feathers, and waste water are all considered as waste and, therefore, are not or hardly brought to value. In the best cases, they are given away for free or collected for free by fish pond owners or traders with a market for the product (especially feathers).

In two slaughter points and in one slaughter house, blood is disposed of through the waste water treatment. In two slaughter points, faeces and intestinal content are used in a fish pond, in the other cases they are disposed of in the waste water. In one slaughter point, feathers are used in the own fish pond, in the other cases they are collected for free by a trader, that sells the feathers either wet or dried to a feather processing company to generate an income. Dead chickens are disposed of in a fish pond.

Thus, small slaughter plants and slaughter points in general do not bring slaughter by-products to value. By-products like blood, manure, and intestinal content are often disposed of in the waste water. If a slaughter plant or point has a waste water clearing facility, this facility is burdened with more organic material that has to be broken down than necessary. If a slaughter plant or point does not have a waste water treatment, the public waste water system (river, sewage system, septic tank) is seriously burdened. Or stated more directly: polluted. The same holds if feathers and other particulate matter is not collected properly with sieves/grids to prevent from entering the waste water stream.

If a product has a value, people tend to be more careful with such a product and collect and handle it properly. Indonesia has a fast growing and important fish production. A lot of ingredients for fish feed are imported. Poultry slaughter by-products, such as blood and small particulate matter, are especially suited as fish feed. The same holds for feathers, although they have a higher feeding value after heat treatment and generally are already delivered to processors to produce feather meal. Therefore, in large slaughter facilities, owned by big integrators, all by-products are collected and get a value either directly or after treatment, generally as fish or animal feed. As a consequence, the waste water from these large facilities is minimally burdened with such 'waste'.

It could be worthwhile to examine if poultry slaughter facilities, fish production, and the environment can gain simultaneously when by-products from poultry slaughter, also from small slaughter facilities, are collected for use as fish feed. Many parties could benefit from utilisation of by-products from poultry slaughter as fish feed:

- The slaughter facilities by extra income;
- The fish producers by cheaper feed;
- The environment by less pollution;
- The slaughter facilities by reduced costs of waste water cleaning;

- The country as a whole by less dependence on imports of fish feed ingredients.

Utilisation of by-products should be in line with regulations on hygiene and safety. An inventory on safe and hygienic processing methods of by-products applicable for small slaughter facilities could help in getting real value from these by-products.

Further reading

D. Silverside and M. Jones FAO ANIMAL PRODUCTION AND HEALTH PAPER 98. Small-scale poultry processing

ftp://ftp3.us.freebsd.org/pub/misc/cd3wd/1004/ag_chicken_processing_ss_unfao_en_lp_105150_.pdf

World Bank, Environmental, Health, and Safety Guidelines for Poultry Processing

<http://www.ifc.org/wps/wcm/connect/2abd40004885549bb38cf36a6515bb18/Final%2B-%2BPoultry%2BProcessing.pdf?MOD=AJPERES>