



FACTS ABOUT A&S THAI WORKS (ASTW)

What does ASTW do?

ASTW make machinery and plants to produce high protein animal feed and fats and oils from fish or animals.

Raw materials

- All types of lean and oily fish from fishing vessel, canneries or processing facilities.
 - Waste from slaughter houses (abattoirs), meat and bone and intestines from beef, sheep, pork, chicken, plus feathers and blood.
- These raw materials are perishable and must be processed quickly.

Finished products

The meals are rich in protein and are used as ingredient for animal feed.
The oils and fats have a variety of uses like food and feed, soap, crème, paint, bio-diesel.

NOTE: The processes remove (evaporates) the water in the raw material and separate as much oil and fat from the meal as possible, but do not remove, destroy or add protein.

- "What goes into the process is what comes out."

History

ASTW was established in Thailand in 1984 and employs 200 people.
The technology comes from the famous Norwegian company Stord Bartz.
90% of the production in Thailand is exported.

ASTW have delivered and installed over 320 processing plant whereof 280 are fishmeal plants and 40 are meat and bone rendering plants. We make all the machinery in our two workshops and buy decanters and separators and electrical components from well-known suppliers.

Typical sizes of standard plants can process from 1 ton to 20 tons material per hour.
Building sizes will range from 12 x 20 meters to 25 x 90 meters

Processes

- All the basic steps in the processes can actually be done in a normal kitchen:
 - 1) Main production process is cooking, pressing out the fat and drying of the meal.
Called LTR = low temperature rendering and fishmeal production.
 - 2) Another process is "frying" (drying) the raw material in an oil bath and pressing out the fat.
Called HTR = high temperature rendering.
 - 3) Poultry feathers are not digestible and must first be pressure cooked (hydrolysed) before they can be dried to a digestible meal to be used for animal feed.
 - 4) Blood can be process by coagulating the raw blood and separating the solids from the liquid with a decanter then dry with dryer.

There are two qualities of processing plants:

- High quality (Europe, USA) plants with good design and technology, very reliable operation and long lifetime. ASTW make this quality.
- Low quality plants from low cost countries with poor performance, poor reliability and short lifetime.

Installation

ASTW is the only supplier in this industry that include full installation of the plants in the delivery by using our own experienced teams, including the electric work.

Energy saving

Technology like WHE – waste heat evaporators helps to save up to 50% of the energy cost like steam consumption.

Odor control

All such processing plants emit some smell from the processing which require special condensation and odor control treatment.

Products manufactured by ASTW - A&S Thai Works

Fishmeal plants – fish and fish waste

LFP - Lean fish plants for lean fish with less than 3% oil in the raw fish, basically just drying

OFP - Oily fish plant for most fish with higher oil content. Cooking, pressing, drying and separation of fish oil. Possible use of WHE – waste heat evaporator to save up to 50% of steam consumption

RENDERING PLANTS TO PROCESS WASTE FROM ANIMALS LIKE BEEF, SHEEP, PORK, CHICKEN, FEATHERS, BLOOD:

LTR – Low temperature rendering plants

Basically, same plant as the OFP fishmeal plant. Careful, low heat processing that produces the highest quality meals and fats and oils, meaning high digestibility meals and fats and oils with low FFA – free fatty acids

Cooking, pressing, drying and separation of oils and fats. Possible use of WHE – waste heat evaporator to save up to 50% of steam consumption.

HTR – High temperature rendering plants

The original rendering process that “fry” all the animal raw material in hot oil and fat (tallow) at high temperature up to 130 deg C.

After the cooker has evaporated all the water the fatty product is pressed in a high pressure press to separate most of the fats and oils.

The final meal has somewhat lower digestibility and fats and oil higher FFA due to the higher processing temperature.

- Batch cookers are used for smaller capacities
- Continuous disc cookers are used for high capacities.

Poultry feather meal processing plants

Feathers are not digestible and have to be hydrolyzed – pressure cooked at 3 bar for 20 minutes to make them digestible, and then dried to high protein feather meal.

- Batch cooker without or with disc dryer to increase capacity
- Continuous hydrolyzer to be used with disc dryer.

Blood meal processing plants

Raw blood is coagulated with live steam and the solids separated in a high-speed decanter.

The solids – decanter cake is dried in a disc dryer to produce high protein blood meal.

Machinery and components made by ASTW

- Screw type cookers for fishmeal production
- Disc type cookers for low temp meat and bone rendering
- Twin screw presses for fishmeal and low temp rendering plants
- Disc dryers for fishmeal and rendering, mild steel and stainless steel
- Meal coolers
- Hammer mills for fishmeal
- Screw conveyors for raw material and meal
- Bins and hoppers
- Shell and tube condensers
- Air cooled condenser
- Waste heat evaporators
- Scrubbers for condensing, deodorizing and dust removal
- Bio filters parts
- Blowers
- Electric control cabinets with and without PLC/ Scada
- Platforms and ladders – hot dip galvanized

Installation

- Mount and connect all machinery and platforms
- Weld steam and stainless processing piping by TIG welding/Argon purging
- Install cable trays and do all the cable laying
- Programming of PLC and Scada automatic control system
- Commissioning, test run and after sales servicing



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