ALTERNATIVES TO METHYL BROMIDE: STEAM TREATMENT FOR THE GEORGIA PORTS

Glenn White, Project Manager

Fiber Fuel International is developing and testing a steam sterilization process for an alternative to methyl bromide fumigation of waste wood from ships and recycling it into fuel. This project is supported by the Southeastern Regional Biomass Energy Program which is administered by the Tennessee Valley Authority for the United States Department of Energy.

During shipping of imported goods into the United States large quantities of wood are used. This wood, dunnage, is used to brace items to prevent shifting during the ocean voyage and in the process of unloading the items the wood is broken and damaged becoming waste wood. Pallets that are imported are not standard US sizes, thus they are discarded. The USDA's APHIS quarantines waste wood from ships which may bring plant pests into the United States. Dunnage and pallets provide a large quantity of this quarantined waste wood . The presently approved methods of dealing with the quarantined waste wood is to either fumigate it with methyl bromide followed by disposal in a landfill or dumping it into the ocean. Dumping in the ocean should not be an alternative, a U.S. and world maritime regulation called MARPOL V makes it illegal to dump dunnage within 25 nautical miles of shore or penalties up to $500,000 and 6 years imprisonment can be imposed by the US Coast Guard. Boats off the coast of Savannah have ran into piles of wood from ships floating in the ocean and they have to stop or damage their boats.

The USDA also allows heat treatment at 71.1°C, for 75 minutes, but this is not a viable option on a waste.

Fiber Fuel International's sterilization process uses a steam treatment process to sterilize quarantined waste wood. A prototype of this Swedish equipment has been tested and proven by the USDA to be effective in destroying plant pests. FFI's process shreds the quarantined waste wood and meters it into the steam sterilizer where it is treated with 105°C steam at 0.5 bar pressure for 5 minutes. The shredder, metering system and patented steam sterilizer are designed and manufactured in Sweden by Winbergs and NYPRO in accordance with FFI's specifications.

The sterilization vessel is about 10 meters long and 2 meters in diameter. The vessel has butterfly valves with stuffing glands at the entrance and discharge of it to insure atmospheric integrity. Inside the vessel a plate conveyor acts both as a treatment table and

chip carrier. Steam from a Clayton Steam generator is injected into the vessel through a multi-port manifold directly onto the woodchips. The results are wood chips that are sterilized with a reduced moisture content, which is required when cofiring with coal.

A USDA compliance agreement for this alternative to methyl bromide is being examined by the USDA's technical research center.

FFI's project uses the sterilized waste wood in its Patented fuel process for cofiring with pulverized coal in utility boilers. The pollution produced from the burning of coal is reduced when wood is cofired with it. The US Ports are a very good source of clean biofuels.

These processes:

- prevents the use of methyl bromide on waste wood
- saves much needed landfill space from being taken by imported waste wood
- provides a source of clean renewable energy

After the development of the equipment and testing of the sterilization process has been proven FFI will market the licensed process to other ports in the U.S. Discussions were held with west coast ports personnel at the Importing Wood Products: Pest Risks to Domestic Industries conference in Portland, Oregon. They were very interested in the process for their waste wood.

Fiber Fuel International & SERBEP

Obtaining Quarantined Waste Wood for Biomass Fuel