Techniques to Obtain Product Uniformity and Consistency

Material: Wood Waste

Issue: *Providing a high-quality and consistent product is necessary criteria for processors to sell their product(s) to the highest-value markets. Consistently producing high-quality material doesn't happen without a great deal of forethought and monitoring.*

Best Practice: This Best Practice recommends that wood-waste processors make a concerted, conscious effort to ensure that every aspect of their processing systems, from sourcing to marketing, is designed to produce consistent and high-quality materials that meet or exceed market specifications. This Best Practice provides an overview of how this consistency is accomplished while also highlighting important ways to achieve this goal. Other wood-waste Best Practices also touch directly on key aspects of assuring product quality.

The approach recommended by this Best Practice could (and does) go by a variety of names, but here it is simply called a "comprehensive quality assurance program." The most critical factors to address in a comprehensive quality-assurance program include the following:

- *Control over incoming waste materials.* Like many of the following steps, this actually entails different activities. It involves seeking out sources of materials (types of generators and segregation methods) that are appropriate for the processing system and available markets. Next, provide incentives (through tipping fee structures and contamination penalties) to suppliers to encourage them to bring in contaminant-free loads. Constantly monitor for contaminants regardless of the source. Then use on-site handling techniques (such as concrete or paved surfaces) to avoid or eliminate contamination of incoming materials. Dedicate appropriate waste streams to specific end-markets. Finally, use pre-processing cleaning or segregation to prevent contaminants from entering the system.

- *Proper design and maintenance of processing equipment.* Obviously the processing equipment and system must be properly designed from the start to ensure that the resulting processed material meets specification, but a firm commitment must be made to inspect and maintain the equipment for every stage of the process. This maintenance keeps the processed material within specification. In addition, re-chipping or other secondary treatment processes may be necessary or desirable to achieve material that meets specifications for higher-value markets.

- *Proper handling of materials after processing.* As with incoming materials, maintaining the quality of processed material requires attention to storage surfaces and conditions to prevent contamination from occurring. Use handling and storage methods to prevent cross-contamination or mixing of different products and prevent moisture differences from developing because of precipitation or evaporation or other factors.

- *Proper staffing and employee training.* Operating a plant without appropriate properly trained staff can cause unforeseen or unsuspected problems in the quality of the processed materials. In the worst case, producing a consistent product could become impossible if the facility is forced to shut down because of personal injuries or accidents involving equipment.

- *Dedicating materials and systems as appropriate to target markets.* Although this appropriate marketing is mentioned above, it cannot be over-stressed that maintaining a consistent product requires attention to incoming materials, as well as the operation and condition of processing equipment. Dedicating specific sources and processing operations to specific end-markets is often necessary to achieve the consistent product that the higher-value markets require.

Implementation: A processing facility should not wait until there is a problem to implement a comprehensive quality assurance program, because by then they have failed to protect their image and portray their business as a consistent (reliable) and high-quality operation.

Many required activities ensure the consistent production of a high-quality material. Again, this goal is not met without a substantial investment in planning and oversight, but the exact procedures will vary depending on the nature and degree of sophistication of individual facilities. For instance, a facility that handles only pallets or a single feedstock material would be unconcerned about dedicating specific feedstocks to specific markets.

In addition to the actual procedures that are implemented, the timing of quality-assurance efforts is also of importance. These efforts should be included from the very beginning of a facility's operation including the design phase for new facilities, and continued regularly. It is not enough to assume that checking the quality of a product once per year will adequately protect against problems. Small changes in incoming material, wear and tear on equipment, and other factors can result in significant changes in the processed material. Again, the goal is to prevent problems from occurring, or at the very least, to catch any problems before they leave the processing plant and become a customer's problem.

Benefits: Providing a consistent and high-quality products improves processors' profitability and competitive edge.

Application Site: This Best Practice applies to wood-waste processing facilities.

Contact: For more information about this Best Practice, CWC (206) 443-7746, e-mail info@cwc.org.

References:

1. Re-Sourcing Associates. *Wood-waste Size Reduction Technology Study*. The Clean Washington Center; June 1997.
2. Hlavka, Rick. Green Solutions, South Prairie, WA
3. International Resources Unlimited, Eugene, OR.
4. Yeasting, John. ReSourcing Associates, Seattle, WA.

Issue Date / Update: March 1997