

# In-The-Woods Chipping

Pulp producer boosts the bottom line

by Tony Kryzanowski

**P**ulp producer Daishowa-Marubeni International (DMI) will substantially boost its bottom line by converting to in-the-woods chipping to produce the hardwood chips needed for its Canadian pulp plant and will also be among only a small group of pulp manufacturers daring to chip aspen fiber in this way.

Once DMI's contractors have fully deployed and commissioned nine Peterson Pacific DDC 5000-G portable chippers, the Alberta, Canada, pulp manufacturer expects to save \$6 million per year.

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DMI Woodlands Superintendent Joerg Goetsch was the architect of the company's plan to adopt in-the-woods chipping.



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In order to deal with debris generated by in-the-wood chipping, DMI has developed skidders with front and back grapples to take debris back to the cut block.

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## In-the-Woods Chipping

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Using portable chippers to manufacture wood chips is not a new concept, as portable chippers are commonly used to process eucalyptus trees in Brazil.

However, during its investigation of in-the-woods chipping, DMI has helped to develop new portable chipper technology to improve on the difficult task of chipping frozen aspen. So far, its contractors have put five chippers to work and are actually achieving better chip quality from their portable chippers than what was being producing in DMI's wood room.

"In the process of changing to portable chippers, we took 12 full steps out of the chain from a tree being cut to a chip being deposited on our chip piles," says DMI Woodlands Superintendent Joerg Goetsch. He was the architect of the conversion plan. DMI's wood room was shutdown in April, and full conversion is scheduled for completion by October 2004.

The 14-year-old pulp mill manufactures about 440,000 air-dried metric tons of pulp per year, consuming about 75 percent hardwood and 25 percent softwood.

Among the technical breakthroughs making in-the-woods chipping of aspen in northern climates more affordable were increasing the size of the sheave and knife

system on the portable chipper and reducing the feed speed from 110 feet per minute to 80 feet per minute so that the debarking flail chains could properly debark the frozen aspen. The Peterson Pacific DDC 5000-G is a combination delimeter, debarker and chipper, manufactured in Eugene, Ore.

"One of the deciding factors of why we went with Peterson Pacific Corporation (PPC) was because of the very unique way that they do business," says Goetsch. "They are not only interested in selling you a piece of equipment, but they are also interested in how they can make that piece of equipment do the work you want it to do better, faster and cheaper. In addition, both PPC and their distributor continually stay involved and provide great after-market product support."

Rather than purchasing the portable chippers and operating them with their own staff or hiring companies solely as chipping contractors, DMI asked its logging contractors to add this function to their operations. All but one of the company's logging contractors accepted their offer. Goetsch says because of how DMI and its contractors are now so interdependent upon each other, the relationship between the two has changed from one of client and contractor to a true partnership.

At a cost of about \$850,000 per unit, this is Peterson Pacific's largest single order of portable chippers to date. Additionally, contractors need to spend around

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\$125,000 more for such items as spare parts and a grapple.

Contractors will operate their portable chippers from midnight Sunday to 7 a.m. Saturday year-round. It takes two employees to operate and maintain the equipment properly. The chippers are high maintenance machines, requiring about six hours of maintenance for every 24 hours of production. One of the most costly items is the flail chain used for debarking. The chipper uses about 200 links per day. DMI has factored in that cost as part of its logging and chipping rates for its contractors.

Another issue was finding a company willing to insure the portable chippers. That has not only been a problem for owners of portable chippers, but for all owners of forestry equipment. A number of insurance companies have stopped insuring forestry equipment. However, after considerable discussion related to such issues as the chipper's fire suppression system, DMI's contractors have been able to get insurance.

DMI's in-the-woods chip manufacturing system has required changes to just about every aspect of its harvesting, skidding, forest management and delivery system.

Harvesting and chipping will occur on DMI's tenured land from October to March. Contractors will be required to only harvest wood three days in advance of what the chipper can process in order to prevent the bark from drying onto the trees. Because the portable chipper produces a significant amount of debris, contractors' skidders have been configured with a unique front grapple and a conventional rear grapple. This is so that the operator can take a front and back load of debris back to the cut block and pile it in a random pattern. Government forestry officials have approved of this disposal method.

Because DMI will no longer experience the 8 to 9 percent fiber loss resulting from yard breakage, log debarking and chipping in the company's wood room, and because its portable chippers can chip down to a 2-inch stem rather than the 4 to 6 inches in the wood room, DMI anticipates that it will realize anywhere from 6 to 20 percent more volume off the same land base.

During the same time of year that DMI will manufacture chips from its own holdings, it will transport logs harvested as incidental hardwood that it owns on land tenured to other companies. These logs

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Adopting in-the-woods chipping using Peterson Pacific DDC 5000-G portable chippers has taken 12 full steps from a tree being cut to chips deposited on the pile for DMI.



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Pulp manufacturer DMI has closed its wood room in favor of nine Peterson Pacific DDC 5000-G portable chippers and in-the-woods chipping.

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will be transported to satellite yards. From April to June, the chip manufacturing process will move to the satellite yards.

From July to September, the harvesting and chipping process will relocate to land owned by private landowners and Indian communities wanting to clear land and eager to sell their hardwood resources.

DMI can no longer rely on the competitive

edge of its long-fibered northern pulp because computer advances have made the use of short-fibered pulp in paper-making just as attractive. This has leveled the playing field between northern hardwood pulp producers and pulp producers utilizing faster growing eucalyptus trees, resulting in considerable competitive pressure on DMI. The savings anticipated from switching to in-the-woods chipping will make DMI better able to respond to these types of competitive challenges and making their operation even more sustainable. **FPE**

One of the most costly items for in-the-woods chipping is the flail chain. The chipper uses about 200 links per day.

