

International Tire Conference

Saving the Environment One Tire at a Time!



INTERNATIONAL TIRE CONFERENCE
BORDER-TIRE MANAGEMENT PARTNERSHIP

San Diego, California | May 5-9, 2008

Cincinnati Retread Systems

Mulching Process



MULCHER



CYCLONE



CLASSIFIER



PRODUCT

“Mulch” Defined

Landscape mulch is variously defined as having a preponderance of plus five chips (Tyler Gauge Sieve) closely simulating wood landscape chips. Specifications include at least the following:

- Free from debris
- Free from glass and metal
- Free from fluff/dust

Typically colored to suit.

May also be applied as playground cover.

Market Trends Supporting the Mulch Market

Rubber playground mulch is safer than wood mulch. No insects, mildew, splinters and fewer injuries.

Landscape mulch demand; higher than the previous 3 years by 200% according to distribution and wholesale brokers.

Market is getting widespread acceptance as consumers are willing to pay a premium price to reduce the yearly maintenance of wood mulch. Saving future time is important to the consumer.

Four Criterion for Success in Mulching

Proper Tire Flow: Good steady supply of feedstock.

Proper Equipment: Know your tire supply and tailor your equipment to process those tires.

Proper Facilities: Good access and flow of tires in, material out, disposal of carcasses, inventory capabilities and truck access.

Proper Partners: Buyer has a major influence on profitability know what he needs precisely: size, quantity, packaging and timing.

Three Best Tire Types to Process Into Mulch

- Truck tire ranges from 20" to 24.5" Bead Diameter
- OTR (Off the Road) tires from 25" to 51" Diameter
- Solid industrial tires from 8" to 16" Bead Diameter
- Passenger tires are not a viable source of mulch material. Too little rubber to process versus time to process

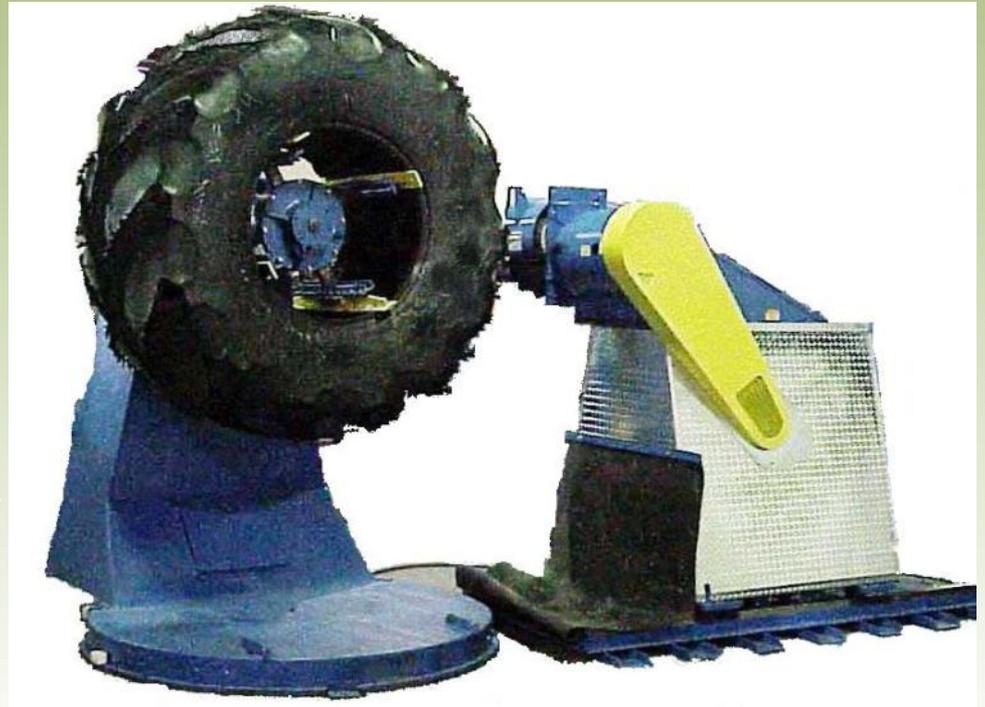
Truck Tire Mulcher

- Create profits from scrap tires
- Easy to operate and maintain
- Variety of tire sizes can be processed
- Ergonomically designed
- Rugged construction
- Relative low capital investment



OTR Tire Mulcher

- Produce up to 30 lbs. per minute output
- Unique blades are optimized to create premium size chip
- Achieve up to 90% plus 5 material for mulching applications



CRS Mulcher Sieve Analysis

Independent Laboratory Analysis Result June 23, 2006

Sieve Size	% of Total Weight
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Combined

Plus 5 and over (Mulch Grade)	88%
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Minus 5	<u>12%</u>
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Total	100%
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Fraction Minus 5

Minus 5 to +20	9.5%
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Minus 20	<u>2.5%</u>
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Total	12%
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The following listing is illustrated of the varied markets available for generated tire particles and components.

Value added aspect of producing mulch includes by products that offer viable economic opportunities in ever widening applications.

Sports Facilities

- Sports grounds, artificial turf, i.e. football, soccer, etc.
- Tracks
- Tennis courts

Stables

- Floor covering for improved hygiene and increased performance
- Watering troughs

Playgrounds

•It is noted that 80% of many states playgrounds are not adequately protected and some states prohibit other alternatives. According to the Consumer Federation of America

Footwear Industry

- Soles

Mats

- Protection of machines and safety at work
- Vibration dampers
- Sound insulation

Mulch

- Industrial
- Amusement parks
- Private homes

Tire Derived Fuel

Tire Derived Aggregate

Ways to Reinforce Positive Results

- Join associations. **Actively** participate in associations activities. TIA, ISRI, Scrap Tire Associations.
- Cooperative manufacturing (partnering) with suppliers. Shredders, TDF users etc.
- Tipping fees if hauling, transportation back hauls, storage of raw and finished materials, and competitive pricing.

EQUIPMENT PRICING

- Mulching equipment is relatively inexpensive compared to shredding equipment.
- Total shop prices start at \$150,000 and can increase by the amount of tires and size of tires processed.
- Expect to receive \$.18 to \$.20 per lb of mulch, \$.07 to \$.10 for fines.

Various products
made from recycled
tires



Saving the environment
one tire at a time
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