Bamboo: A New Paper Mill Feedstock?

Industry practitioners well steeped in pulp manufacturing technology often display a (some would say “healthy”) skepticism of extravagant claims for new processes or raw materials. In regard to the latter it can be said that, at least in western countries, wood has been in a dominant position since it displaced rags as the raw material of choice many years ago. More recently, however, the use of alternative (“non-wood”) raw materials such as straw and annual plants has begun to catch on. Witness, for example, the October 22, 2015 groundbreaking by Shandong Tranlin Paper Company for its new $2 billion mill in Chesterfield County, Virginia and the earlier announcement by the Columbia Pulp Co. that it will build a straw pulp mill in Columbia County, Washington. The feedstock for the Virginia mill will be agricultural byproducts such as wheat straw and cornstalks.

Another non-wood material, bamboo, has recently been receiving increased attention in North America. At a conference hosted by the Technical Association of the Pulp and Paper Industry in Atlanta last month, Richard B. Phillips lent credibility to the idea that making paper out of bamboo may become a commercial reality in the US.


Phillips noted that more than 4 million metric tonnes of bamboo are currently consumed elsewhere, mostly in countries such as China and India, where wood fiber is scarce. (One large market pulp mill in China, for example, consumes more than 600,000 tonnes per year to produce 288,000 tonnes per year of market pulp.) That bamboo is receiving attention in North America is becoming increasingly apparent. Kimberly Clark, for example, has shown interest in sourcing fiber from non-forest sources, possibly motivated by their contention that non-wood fibers are more sustainable than wood fibers.

The authors’ analysis of plantation viability included the effects of seedling cost, chip price, land price and growth rate on internal rate of return. They concluded that chip price should be at least $75 per ton and that a growth rate of 20 tons would be necessary.

In the second part of their study, the authors assessed the potential for bamboo to replace mixed hardwoods in a southern hardwood kraft paper mill. As input to their economic model they performed laboratory evaluations of bamboo pulping, bleaching and paper properties. The results predict that bamboo use would result in lower delivered wood costs, lower bleaching costs, lower cooking chemical requirements and lower evaporator loads, but questions remain concerning effects of high fines contents.

In summary, it appears that planting and pulping bamboo are practices that deserve a careful second look by the US paper industry.

Trend Indicators from Industry Intelligence Inc.

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Intelligence delivers a daily report featuring news of
the paper and forest products industries. For your
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Below is a sampling of recent Industry Intelligence
headlines, chosen to mirror significant trends and other
interesting developments in and around the paper and
forest products industries.

**Fortress Paper's Q3 adjusted net loss widens to
C$8.4M from year-ago net loss of C$5.7M, while
sales increase 6.0% to C$85.2M; improvement in
sales led by dissolving pulp, with ongoing efforts to
diversify segment's end-market exposure gaining traction**

Dissolving Pulp operating EBITDA was $5.4 million
for the third quarter of 2015, representing an improvement of $3.3 million over the second quarter of 2015.

**Verso's net loss widens to US$111M from year-ago
US$36M net loss, with special items totaling US$66M
in Q3 2015 versus US$2M a year earlier; Q3 net
sales up 123.4% year-over-year to US$782M, mostly
due to additional sales from NewPage acquisition**

When compared to 2014 sales as adjusted to include
the impact of the NewPage acquisition and the sale of
the Bucksport mill, sales have declined.

**Verso CEO sends letter to employees notifying them
that the company is considering range of
restructuring alternatives, noting 'perfect storm of
external factors that negatively affect our liquidity
and cash flows,' and detailing Verso's ongoing struggles**

Verso in January acquired its former competitor
NewPage Holdings; the challenges did not subside
after the merger. The market for the company's coated
paper is being squeezed on two sides: from falling
demand and increasing foreign imports, said Bill
Cohen, Verso's spokesman.

**Oji Holdings plans to install manufacturing
demonstration facility in Japan for cellulose
nanofibers production that applies phosphate
esterification chemical treatment method, which Oji
developed and believes to be the most feasible of its
type currently**

Oji will assess the energy reducing effects of the
production process and will broaden the array of
samples to be provided to users, expediting progress
towards commercialization.

**Auction of assets of bankrupt Lincoln Paper and Tissue in Lincoln, Maine, not including land, draws top bid of US$5.9M from Boston-based liquidator
Gordon Brothers, says mill's attorney, noting assets could be resold to a papermaker or scrapped**

The mill's revenue in 2014 dropped to $70 million
from $145.3 million the previous year, primarily as a
result of a boiler explosion.

Commission's ruling on SC paper imports from
Canada, calling it a "win" for Verso, UPM Madison
Paper, and entire US paper industry; Brown-
sponsored law enhances US antidumping and
countervailing duty statutes**

“Our workers can outperform anyone in the world but
we have to ensure that we take action against countries
that would break trade rules to gain an unfair
advantage,” said Brown.

**Pennsylvania utility commission approves final
rulemaking order prohibiting public utilities from
charging customers to receive paper utility bills, after concluding cost of providing paper bills is
traditionally included in utilities' operating expenses**

The rulemaking follows a March 20, 2014, Order
resolving a Commission investigation into the practice
of paper invoice charges in the telecommunications
industry.

**Global demand for superabsorbent polymers
expected to reach 2.4 million tonnes by 2016, boosted
by rising sales of disposable diapers, especially in
developing countries, report finds; market expected
to reach US$9B in value by 2020**

Demand for disposable diapers is expected to reach
1,790 thousand tonnes by 2016, up from 1,593
thousand tonnes in 2014.

**AF&PA Statistics**

Since our last reporting of American Forest and Paper
Association statistics releases, the Association has
issued its October Containerboard and Kraft Reports.

**Containerboard**

Production was 1 percent lower than in October of last
year. Compared to September 2015, average daily
production was 1.4 percent lower. The operating rate
for October decreased to 94.5 percent, whereas year-
to-date operating rate remains flat compared to 2014 at
96.3 percent.

**Kraft**

Total kraft paper shipments were 149.2 thousand short
tons, 7.2 percent higher than in October 2014. Bleached kraft paper shipments increased from 8.6
thousand short tons in September to 9.4, while unbleached kraft paper shipments increased from 128.0 to 139.8 thousand short tons. Overall, year-to-date shipments up to October 2015 were 2 percent higher compared to the same period in 2014. Total month-end inventories increased to 76.8 thousand short tons.

Purchase the full reports by contacting Caroline Nealon, Statistics_Publications@afandpa.org or 202-463-2448.

**Paper Quotes**

“We still believe we can make money from paper for a while, but eventually we need to look to other opportunities to use this solid wood and pulp base for other products.” – Resolute CFO JoAnn Longworth, announcing Resolute’s acquisition of tissue maker Atlas Paper.

“I know this news is unsettling, but be assured that Verso will continue to operate our business as usual as we explore a potential restructuring and potential asset sales.” – Sean David Paterson, Verso, on the company’s restructuring prospects.

**Statistics Corner: Forest Productivity by Country**

The figure below shows country-to-country variation in forest productivity for two tree species, pine and eucalyptus. It illustrates Brazil’s advantage over other countries in this regard. Growth rates in Brazil are more than twice as great as in the US.

![Figure 1. Forest Productivity, m³/ha/yr](Source: BRACELPA)