Dissolving pulp demand still growing at a strong pace

Viscose fibers lead the development
- Even though total textile fiber usage has weakened
- Share gains for viscose fibers, mainly against cotton
- China accounts for 66% of global viscose fiber output

Production of hi-alpha products is also growing
- Mainly in the cellulosic ethers sector
- Cellulose acetate limited by drop in cigarette consumption
- China accounts for 33% of global hi-alpha product output
Chinese viscose fiber production rose 7% in 2018

Following 8% annual increases in 2016-2017
- Despite decelerating economic growth
- Helped by increasing exports
- Operating rates plunged to 82% last year
- From 91% in 2016 and 89% in 2017

Production expected to slow slightly further
- To 6% annual increases in 2019-2020
- Fewer opportunities to export as economies slow
- More VSF capacity expansion in other countries
Growth in Chinese viscose fiber production

Global viscose fiber production

2019 | Fastmarkets | Global Dissolving Pulp Outlook
Chinese production of hi-alpha products is also growing

But on a much smaller scale than viscose fibers
• Cellulose acetate limited by declining cigarette usage
• Cellulosic ethers growing along with economy
• Products such as nitrocellulose and food casings also rising

Hi-alpha pulp consumption even lower
• Due to furnish share being well below one
• For both major products, acetate and ethers

Global hi-alpha derivatives output
China is also a major factor on the supply side of dissolving pulp

**China is the largest producer of dissolving pulp**
- With total capacity of 2.4 million tonnes in 2018
- At 20 producing companies
- Accounting for 26% of world capacity

**However, capacity has stagnated since 2012**
- Declining competitiveness of cotton linter producers
- Offset by increasing wood-based capacity
- Shift to paper grade at swing mills over the last two years
More dissolving pulp capacity is coming in China

Led by the recently started Chenming greenfield mill
- Swing mill, producing paper grade and viscose pulp
- Rizhao mill of Asia Symbol can now produce viscose pulp
- Potential to supply growth in Sateri pulp requirements

Chinese dissolving pulp capacity expected to rise by 200,000 tonnes in 2019-2020
- Could be much more, depending on production decisions by Chenming and Asia Symbol
Significant additions to capacity are also scheduled outside of China

Sun Paper has started a greenfield mill in Laos
- APRIL is shifting more capacity to viscose pulp in Indonesia
- Sappi is upgrading mills in South Africa
- Arauco is converting a mill in Chile from paper grade
- Stora Enso is converting a paper grade line in Finland

Viscose pulp operating rates reached 88% in 2018
- Helped by shift at swing mills to paper grade
- Before declining over next two years
- Hi-alpha operating rates stabilize after extended drop
Viscose pulp prices have been dropping this year

- Supported by a strong paper grade market and increasing output of VSF
- Now, downward pressure from falling paper grade prices, new capacity and relatively low VSF prices
- Cotton linter prices have also been relatively low

Hi-alpha pulp prices continue to flat line
- Following an extended drop
- Good growth in cellulosic ethers segment
- Limited by continuing problems in cellulose acetate
Viscose pulp pricing will be subject to competing influences through 2020

**Major factor will be paper grade pricing**
- Which will affect amount of swing capacity in viscose
- Continuing good demand growth will be a positive
- Significant capacity expansion will be a limiting factor
- As will comparatively weak VSF pricing

**Hi-alpha pulp prices will be impacted by**
- Variations in viscose pulp prices
- Further growth in cellulosic ethers segment
- Upgrading of viscose pulp capacity

Dissolving pulp prices in China
Dissolving pulp profitability
Price/variable cost, delivery to Shanghai

Outlook for the Global Dissolving Pulp Market
• Update coming in July 2019
• Forecast through 2030

World Dissolving Pulp Monitor
• Monthly forecast and commentary
www.risi.com/wdpm
Thank you for your attention

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