

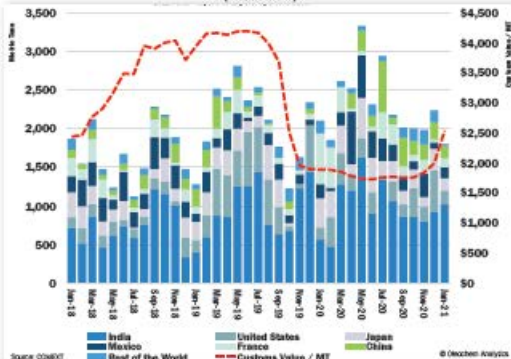
GUM TURPENTINE - CONTINUED

Brazil

Gum turpentine prices for export and domestic usage are surging in Brazil. With firm gum rosin prices, it is expected that the production volumes of gum rosin and gum turpentine will continue at current levels.

In January, export volumes were lower but the customs value per MT continued to tick up-wards.

Brazil Gum Turpentine Exports (Volume in MT)



ROSIN ESTERS & C5 HYDROCARBON RESIN

Rosin ester production halted temporarily during the extended holiday in China. Demand continues to be soft and competitively priced hydrocarbon resins have maintained prices at low levels.

In the south of China, gum rosin glycerol ester (Pinus elliottii based) was quoted at RMB 13,700/Mt (\$2,117/Mt) EXW. Quotes for gum rosin pentaerythritol ester (gum rosin Pinus elliottii based) were at RMB 14,000/Mt (\$2,164/Mt) EXW.

Gum rosin prices are expected to remain firm for the next few months, forcing rosin ester producers to pay higher prices and squeezing margins. High rosin ester prices will cause softer demand from downstream industry as C5 hydrocarbon resins gain market share because of cheaper prices.

At the end February in north east China C5 hydrocarbon resin into road marking applications prices was around RMB 10,400 /Mt (\$1,607/Mt) EXW. C5 hydrocarbon resin into the adhesives sector saw softer dynamics and traded at around RMB 11,900/Mt (\$1,839/Mt) EXW.

Looking ahead, firm crude oil and high petrochemicals prices will provide upward price pressure on for the hydrocarbon resin market in China.

CHINA GUM ROSIN FOCUS

Steady Decline Of Chinese Gum Rosin Production In The Past Decade

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Structural changes in the gum rosin sector have been developing in the last decade and is mainly due to the rapid drop of pine oleoresin production in China, which was the leader since the '90s. In 2006 and 2007, the output of Chinese rosin reached 800,000 metric tons/year. In 2020 it came just to 320,000 metric tons. This fall has been challenging to offset by other producing countries.

In the last hundred fifty years, the leadership in the production of gum rosin passed from France to the USA and later to Portugal and Spain to finally position itself in China. Every four or five decades, it found a port to anchor itself. Today, the question is if Brazil and Argentina can take this lead for decades to come, based on a modern and sustainable resin technique.

In addition to these structural changes, 2020 has been a challenge because of the global pandemic. Even when global vaccination brings hope for a way out, we will live in times of social distance and care during 2021.

In 2013 during the China Gum Rosin Trade Conference, held in Huangzhou, ZJ, China, Zhen (Jack) Guangjian from Komo Resins pointed out that "... China will position itself as the global producer of resins with imported gum rosin ...". During the 2019 Pine Chemicals Association International Conference in Vancouver, Canada, Song Lifeng from Star Pine mentioned in the conclusions of his presentation that "... not far in the future we will see Chinese imports of gum rosin on the order of 200,000 tons per year. ...". I fully agree with these statements, as I have followed the decline in Chinese pine oleoresin production for the past decade. But I am surprised by the speed that things are developing!

In 2020, the year of the COVID-19 pandemic, China already imported an equivalent of 103,000 tons of gum rosin (see Note below and Fig.1).

Fig. 1 China Gum Rosin Production & Exp/Imp Balance (Metric Tons/Yr)



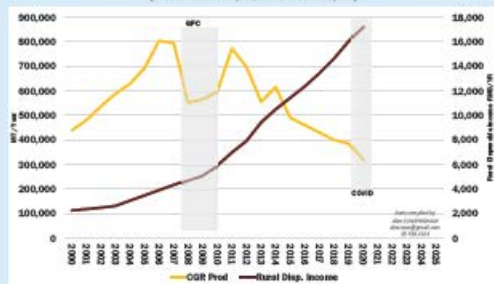
During the 2020 China Gum Rosin Trade Conference, held in Jinggangshan, JX, China, Zhen (Jack) Guangjian alerted us that "... we must develop new products [with gum rosin], find new applications, increase the added value, and avoid competition with petroleum resins.

CHINA GUM ROSIN FOCUS - CONTINUED

The decline in Chinese gum rosin production does not have a single cause:

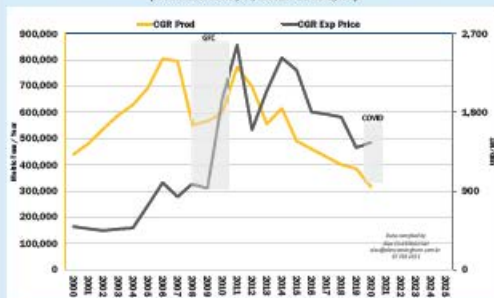
- Inefficiency of the pine tapping technique and cultural and geographical conditions make it almost impossible to introduce modern tapping methods.
- Increase in rural disposable income in the last two decades due to the Chinese government's plan to shift from an export-based economy to domestic consumption (Fig.2).

Fig 2. China Gum Rosin Production & Rural Disposable Income
(Production as MT/Yr, Income as RMB/YR)



- Little investment in forestry genetics to improve pine-producing resin trees.
- New environmental regulations limit forests' use and make the distillation of pine oleoresin into gum rosin and turpentine more costly.
- Other producers of gum rosin (Brazil, Indonesia, Vietnam, Argentina, etc.) entering the export market and competing mutually pull-down rosin price (Fig.3).

Fig 3. China Gum Rosin Production & Export Price
(Production as MT/Yr, Income as RMB/YR)



Nevertheless, we do not expect the total disappearance of pine oleoresin production in China in the coming decades; the volumes will keep diminishing and be destined solely for the local market.

Note: China exported 23 kTons of gum rosin in 2020. At the same time imported 96 kTons of the same product, plus an additional 19 kTons of pine oleoresin (POR) that equates to 14 kTons of gum rosin at a 75% yield rate. Bringing imports to a total of 110 kTons, and a exp/imp balance to -87 kTons.

CTO & TOFA
Americas

Tall oil fatty acids (TOFA) were assessed higher for March to reflect upward price pressure because of strengthening demand across some sectors, firming feedstocks and numerous price increase announcements announced in the market.

Kraton announced another general price increase of 10% across its entire Pine Chemicals and AMS portfolio. Subject to the terms of any applicable contracts and obligations the price increase is effective immediately. The previous price increase was in January 2021.

Ingevity Corporation has announced a general price increase for all merchant and derivatized tall oil rosin (TOR) and TOFA products associated with its industrial specialties and oilfield technologies portfolios. The increase is due to strong market demand and increasing raw material costs and will range from 10-15%. The new prices will be effective April 1, 2021, or as contracts allow.

Continued demand weakness into printing inks, rubber and sterols is partially offsetting increased demand into rosin products in adhesives and paper chemicals.

TOR demand in the US remains soft but is heard improving slowly.

Fractionators are heard starting to raise operating rates after running at lower rates in the second half of 2020. As vegetable oil prices have firmed significantly in recent months, TOFA is competing with fatty acids mostly outside of the US market. When buyers have the ability to change formulations easily, they are switching to TOFA as prices are lower than oleic fatty acids.

Supply of US crude tall oil (CTO) supply has remained lengthy in recent months as fractionation slowed amid long TOR inventories. However, prices are heard firming and increasing export volumes of CTO into Europe, mostly destined for renewable fuels production, is ongoing and expected to gain momentum throughout 2021.

US CTO Exports
(Countries Representing 95% of Volume in MT)

