

# Guangxi—China's Major Gum Rosin and Gum Turpentine Producer

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The Guangxi Zhuang Autonomous Region in South China is among the economically backward areas in the country. However, it leads China in the production of gum rosin and gum turpentine.

According to statistics, last year Guangxi produced 158,600 tons of gum rosin and 15,370 tons of gum turpentine, accounting for 45% and 32.9%, respectively of the national total.

The bulk of the gum rosin and gum turpentine produced in Guangxi is consumed domestically. In 1991, the region exported only 48,295 tons of gum rosin and 2,891 tons of gum turpentine. The buyers came from 30 countries, including the United States, Japan, Germany, Italy and France.

China now has about 19 million hectares of pine trees. Table I provides details of the rosin industry in China. The pine trees grow mainly in Heilongjiang and Yunnan provinces and Guangxi. Though Heilongjiang, which borders on Russian Siberia, boasts rich pine resources, lumbering is the main business there. Most forests in Yunnan, Guangxi's western neighbor, defy access. This leaves Guangxi the top rosin producer in China.

Pine trees in China provide about 500,000 tons of pine gum every year. This has enabled China to produce about 350,000 to 400,000 tons of gum rosin and 46,000 to 50,000 tons of gum turpentine per year. At present, the country has 280 gum rosin plants with an annual production capacity of 800,000 tons.

However, many of these plants cannot operate at full capacity and the production of gum rosin dropped to 350,000 tons last year. According to the Industrial Bureau of the Forestry Ministry (IBFM), a government body which supervises gum-related chemical production, the drop in gum

Table I. The Rosin Industry of China

	Guangxi	Rest of China	Total China
Hectares of pine trees	2,000,000	17,000,000	19,000,000
Pine gum production (tons/year)	220,000	280,000	500,000
Rosin plants	40	240	280
Rosin plant capacity (tons)	240,000	560,000	800,000
Gum rosin production 1991 (tons)	158,557	191,443	350,000
Domestic use of gum rosin 1991 (tons)	110,262	18,953	129,215
Export of gum rosin 1991 (tons)	48,295	172,490	220,785
Gum turpentine production 1991 (tons)	15,374	31,389	46,763
Export of gum turpentine 1991 (tons)	2,891	3,509	6,400

rosin production was caused by the government's strict control over production, and limited demand.

According to a bureau estimate the next five years will see a modest growth in domestic consumption of gum rosin, which is expected to reach 240,000 tons a year by 1995. In 1991, China used about 129,000 tons of gum rosin.

In China, gum rosin is used in producing paper, varnishes, paints, sealing waxes, adhesives and soaps. Paper

making takes up 25% of its annual yield.

Gum turpentine is used to produce camphor, polyterpene resin, borneol, terpineol and linalool. In 1991 China produced 9,000 tons of camphor, 600 tons of polyterpene resin, 300 tons of borneol and 2,000 tons of terpineol.

After meeting its domestic needs, China exports some of its pine gum and pine gum-related products. Statistics show that China exported only 4,000 tons of pine gum in 1989, but in the last two years total exports jumped to 20,000 tons.

IBFM officials are worried about the increasing exports of pine gum. Though the export of pine gum by local companies is only a recent development, it tends to go wild if left unchecked, they say.

Pine gum can be processed into more than 100 chemicals. It sells at only US\$330 a ton on the world market, compared with about US\$530 a ton of gum rosin. The Ministry of Forestry has urged local foreign trade departments to stop the export of raw rosin, but export more processed products.

China's gum rosin production started with the Wuzhou Rosin Plant established in 1952 with Soviet help. With the introduction of distillation equipment from the Soviet Union, the plant, located in the city of Wuzhou in eastern Guangxi, produced 1,210 tons of gum rosin in 1953, most of which was exported to the Soviet Union.

In spite of its initial low output, the plant ushered in

China's gum rosin industry. Today, the plant has grown into the world's largest gum rosin producer, with an annual capacity of 40,000 tons.

The Wuzhou plant is a showcase of China's gum rosin industry. The hard, brittle and transparent gum rosin produced by the plant consists mainly of abietic acid. With a specific gravity of 1.08 and a softening point of not lower than 76°C, its gum rosin is considered to be one of the best in the world.

In recent years, the plant has shifted to processing gum rosin into value-added chemicals such as disproportionated rosin and potassium soap of disproportionated rosin; and linalool from gum turpentine.

The shift is meant to cater to the need of the country's synthetic rubber and perfume industries.

The plant imported a disproportionated rosin production line from Japan in 1982 with an annual production of 11,000 tons. Now, the factory produces around 8,000 tons of potassium soap of disproportionated rosin per year.

The plant supplies potassium soap of disproportionated rosin to major domestic chemical plants such as the Jilin Chemical Corporation in northeast China, Lanzhou Chemical Corporation in northwest China and Qilu Synthetic Rubber Plant in east China. It also exports about 1,000 tons/year of this product to Japan, South Korea and Taiwan.

Linalool is obtained from gum turpentine through a series of chemical reactions. The product has a strong, pleasing flower aroma, devoid of camphoric and terpene odors, experts say. It is used for cosmetics and food flavorings.

According to IBFM, China has to import about 400 tons of linalool a year to satisfy demand from its cosmetics industry.

While continuing to export gum rosin, China is making efforts to do more processing. The Wuzhou Rosin Plant has established a linalool workshop, which now produces 30 tons a year. To boost linalool yield, there are plans to import processing equipment from the United States, according to Qin Minghuan, the plant director.

Recently the plant signed a contract with Tecinter SA, a Spanish chewing gum manufacturer, to start a joint venture producing edible gum rosin, a raw material for chewing gum. When completed in early 1993 the venture, called Cafosa Pacific Ltd., will be able to produce 2,700 tons of edible gum rosin a year. The project will involve an investment of 26 million yuan (US\$4.8 million), with 25% coming from the Wuzhou Plant, Qin said.

The plant has also been involved in overseas gum rosin ventures. In 1985 the plant helped Sri Lanka build a gum rosin plant with an annual production capacity of 200 tons. Engineers of the Wuzhou plant are now designing a gum rosin plant for Laos. It is scheduled for operation this year.

### Reference

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