China: important raw material producer?

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Since I am an irregular visitor to China, I readied myself for an expected culture shock before landing in Peking. Maybe it is really a political-economic shock; from the bright lights and vibrant environment I am accustomed to, to the dimmer, uniformed, disciplined, and slower pace of China. My last visit five years ago was well before the fall of the "Gang of Four." Crossing into China at that time was accompanied by an indefinable sense of adventure, of penetrating what was then still largely a hostile, unknown, and unknowable continent.

This journey was no different. The shock was duly felt, but very differently than before. Of course I had read all about the changes after the "Gang" disappeared. Still something felt different. I felt I was in a new atmosphere, perhaps a new China. In Peking as well as the other cities I visited Western movies were being shown. Sure they are taking it easy, Charlie Chaplin for openers, billboards, advertising, even some colorful lights replacing slogans of Chairman Mao. Lipstick, hairdos, and colorful dresses in Shanghai; this could not be China. Coca-Cola at the hotels, U.S. dollars only please, one buck for a small bottle but it is there! On the train one is greeted with the "Sound of Music" instead of the sound of politics. All of this and more added to my new sense of surprise.

These surface changes are just the tip of the iceberg. The deep changes in China are coming from the change in the very fabric of the economic system and the blame placed on the leaders of the cultural revolution which virtually froze China in its tracks for 11 years. During this time, emphasis was given to pure leftist thinking and political dogma. Universities nearly stopped functioning, research was halted, people were sent out of the cities to work in the fields, all in an attempt to keep Mao's revolution pure. The purpose was to stop any progressive thoughts from developing. All this has changed and changed fast in the last two years.

By their own admission, those 11 years created a lost generation in China. They have a lot of catching up to do. They are eager to learn from the outside, referring to themselves now as a developing nation, constantly pointing to their relatively low standard of living. They are pointing to reality instead of covering it with the rhetoric of the past.

These changes and China's new awareness of the outside are very important in considering my topic: "China: important raw material producer?"

Before examining how this specifically refers to essential oils and aroma chemicals, we must go back to economics and understand what has happened in China and what will happen in the future.

At this very moment, a deep change is occurring. China is combining centralized planning with a market economy in a move to encourage initiative at the local level and make production more responsive to the needs of the people and export requirements.

In the past, products in the aroma field, for example, were often produced blindly without knowing what the customer really needed for both home and abroad. The provincial and local authorities will now have more autonomy in planning the production and marketing of these products. This shift is still considered by Chinese officials as necessary to modernization but their minds are still full of uncertainties.

Among the anomalies of the centralized Chinese system is the fact that some production teams are losing money by following the Maoist principle of self-sufficiency. The cost of fertilizer and other direct costs can be greater than the return to the farmer. The farmer is therefore subsidizing the state at the cost of self-impoverishment. These practices will be stopped and stopping them could affect our industry directly. Export prices, consequently, may be raised to a level which will develop real profit for the farmer. The same principle applies to aroma chemicals.

Modernization in China is a complex issue, without a simple way to reach the goals that are presently being set. For example, mechanization of agriculture is no longer seen as a panacea for

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low productivity. It is now known that China has an unemployment problem which could be made worse by replacement of people with machines.

The present economic climate in China arises from the fact that the political and ideological education of the past was not enough to motivate people at the worker and farmer level. The Chinese, like all of us, want food, a decent life and an improved standard of living. Productivity must increase if these goals are to be met. To be more productive, China must improve technology and offer incentives to the farmer and worker. If restructuring works, we should see China as a competitive element in the marketplace, supplying the products that we need for many years to come.

The Chinese essential oil industry is controlled at the top by the Ministry of Light Industry. All exports of aroma chemicals and essential oils are marketed through one of China's ten export corporations. The one controlling our industry is called China National Native Produce and Animal By-Products Import and Export Corporation. This export corporation has 12 branch offices, each with suboffices in different parts of China. The head office is in Peking.

Of the 12 branch offices, seven export and negotiate directly with foreign buyers. This export corporation deals only with outsiders, since internal needs are handled by a different group. Generally, coordination between the head office and branches for production and pricing has improved.

The export organization system acts as a marketing organization. Its suppliers are aroma chemical factories and essential oil-growing communes. Their customers are importers, manufacturers, and brokers worldwide.

Planning for production and pricing is done on most items by a committee consisting of export, internal, and producing interests. Meetings are held in Peking as required, at least once a year. Once prices are fixed to the grower or factory, the product is received by them regardless of the export price. If the export price happens to be lower than the cost price internally in China, the state subsidizes this so that the actual producer is not hurt by the external market. On the other side, if the profit is made by the export corporation over and above its cost, this difference goes to the state.

The export corporation has almost complete authority to set the selling price. However, some conditions may be set by the producer, such as qualities to be offered and selling on preshipment sample. The export corporations have additional flexibilities on payment terms, commissions, special discounts, and so forth. The Chinese are excellent businesspeople and are learning fast. They are willing to change their practices as they see what it takes to do business abroad.

China is now more market aware, sending delegations to every part of the world to find the prevailing prices and needs. This will put them in a better position to make more realistic plans. Poor planning in the past has made them sensitive to the problems that can develop through over-production or under-production.

Personnel from the export corporations are strictly of commercial orientation. Technical matters must be taken up with the producers themselves. In the case of aroma chemical factories, technicians are on the staffs of such factories. In the case of natural product production, there are provincial research groups, developing better equipment and advising on agricultural matters.

Shanghai is the home of the largest essential oil, aroma chemical, and perfumery research group in China. It is the Scientific Research Institute of Flavor & Fragrance Industry. It is China's best equipped and staffed group considering these matters. The work includes perfumery, flavoring, natural product research, aroma chemical research, analytical methods, and product safety. There are additionally ten other regional centers which tackle some of the same problems.

The Research Institute began its work in 1956

but stopped during the cultural revolution from 1966 to 1976. The scientists that I met felt happy to once again resume this activity in a field that they felt was very important. They realize that they have an uphill climb to catch up and familiarize themselves with what has gone on in the past years. I am sure Chinese industriousness and a release of the pent-up talents of these people will bring about a combined reformation and renaissance in the Chinese aroma industry.

For the time being, the Research Institute is considering practical matters, such as improving the yields of natural and synthetic products, learning to utilize all Chinese raw materials to satisfy the growing needs for flavor and fragrance materials, and developing fragrances and flavors for the factories around China as required. Analytical work is beginning on all of the natural essential oils found in China to develop better knowledge of these products and how they can be used in the future.

The Chinese have already begun to show some new products. Among the first are certain varieties of mint, new floral products, and oils from herbs or roots used in traditional Chinese medicines.

Undoubtedly, China is the largest producer of essential oils in the world. According to the Chinese, 112 kinds of spice and essential oils are produced, employing over 6,000 people. It must be kept in mind, however, that only 7% of China's land surface is now cultivated. With a population approaching one billion, priority must be given to food crops.

Essential oils are produced all over China, for the most part in traditional steam distillation apparatus. There is also a large industry for extraction with volatile solvents producing both oleoresins and floral concretes.

There are literally thousands of distilleries ranging from one small tank holding as little as 50 kilos of plant material to larger ones with 4-5 units each holding up to one-ton charges. By and large, distillation plants are small but numerous. The distilleries are operated by burning wood or coal; oil is used infrequently.

The distilleries themselves are operated by production teams. These teams are the smallest segments of commune brigades with several of these brigades making up the commune itself. There are about 50,000 communes in China and about 2,000 state-owned farms, comprising the entire agricultural system.

Since China has no shortage of labor, the production teams are well staffed and have adequate personnel to collect and grow the essential oil bearing material. This goes for both wild varieties such as cedarwood, litsea cubeba, or cultivated varieties such as geranium, mint, citronella, and cassia. Methods of gathering vary from cassia which grows on steep mountainsides to mint, which is machine harvested on well-kept flat fields.

Since aromatic plants are important to the Chinese for internal needs, I feel that we will see a continuation of supply from this source. This will only be moderated if, with more autonomy now afforded to the communes, they switch to more profitable items. An additional factor is China's internal demands, which may be growing faster than even the Chinese themselves realize.

This rapid growth can be explained. The government of China wants to give its people the feeling that the standard of living is rising. Offering perfumes, cosmetics, soaps, candies, and beverages is an inexpensive way to create a sense of well-being in the broadest segment of the population. The public, with more expendable income, can afford these low cost luxuries.

The cosmetic and perfume counters in the Chinese department stores are well-displayed and stocked. They were the only counters that I noticed that attempted to attract attention in otherwise drab surroundings. It is obvious to me that China may end up being its own biggest customer, with ever-increasing needs.

Can production keep up with two hungry mouths, one the outside world, the other China's own potentially great appetite? I wish it were

possible to give an unqualified "yes," but the answer at this point is only "maybe." Prices will play a deciding role since more autonomy will be given to the producers. It will take more money to stimulate more production.

In China the aroma chemical industry has developed along traditional lines, changing little over the last 20 years. For the most part, aroma chemicals are fabricated from natural materials: ionones from litsea cubeba oil, geraniol from citronella oil, eugenol from clove oil, to mention a few. In some cases it sounds like an expensive way to do it, but China puts priority on using its own materials rather than importing. Other chemicals are produced from petrochemicals which can put China in a very good position. If China bases its cost for petroleum derivatives on its own cost of production instead of OPEC pricing, it may be in a special position to compete in a major way worldwide.

There are some factors which are still holding availability down, including a lack of capacity, internal demands, and quality questions. There are at least 25 facilities in China producing aroma chemicals—some a broad range and others limited to one starting material with a few intermediates. An example is the production of synthetic camphor where camphene, isoborneol, and isoborneol acetate are produced along the way, starting with gum turpentine.

Additional technology is needed by China to improve aroma chemical production. Quality control methods must be upgraded to meet international standards. China has a good start in the field but needs to make up for the last ten years. Plants that I visited seemed to be running on a batch basis. Equipment was all homemade and in many cases erected 20 or more years ago. In spite of all this, substantial tonnage is churned out every year.

Items well-known as Chinese exports are nitro-musks, heliotropin, citral derivatives, camphor, coumarin, and vanillin. Aroma chemicals from China will continue to be available but will be subject to the same questions as raised before regarding natural products, price, and internal needs.

As China is on the brink of "most favored nation" status, duties on aroma chemicals and essential oils for that matter will be drastically reduced. However, this reduction will by no means bring forth a flood of Chinese aroma chemicals at giveaway prices. Market studies, internal needs, and long-term arrangements are placing China in a more selective selling position than in the past. It is my feeling that the Chinese are committed to aggressively pursuing certain segments of the aroma chemical business.

In the near future China will attempt to utilize more of its raw materials by chemically converting and upgrading. With duties lowered in the United States, this trend will be accelerated. Products like cedarwood, litsea cubeba, and citronella will be used to gain more revenue for its efforts.

In the next few years, we might see China entering into joint ventures with foreign companies to obtain the technology to modernize its aroma chemical industry. These joint ventures will spin off cooperative efforts of all sorts. As China wakes up from its long sleep, new research products will begin to emerge. Lastly, China may offer a safe haven for the next few years to those aroma chemicals that are being threatened for environmental reasons in other countries.

I am convinced that China is here to stay in the essential oil and aroma chemical business. Encouragement should be given to China since there are few countries left in the world with significant potential to produce increased supplies of both natural essential oils and aroma chemicals. Last but not least is the factor of integrity. When dealing with the Chinese, I am certain they will never let us down.

Acknowledgment

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