

Manufacturing



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Drug ingredients, now in our hands

SARWAR A CHOWDHURY

HOW many people know that the raw material needed to make antibiotics or 'active pharmaceutical ingredients' (API) can be found in potato starch or glucose or molasses. Except drug chemists and scientists, the numbers would be few.

To manufacture 1 kilogram of erythromycin, an antibiotic, 4 kilogram of potato starch and 2 kilograms of molasses, along with other raw materials, are needed for fermentation.

It is a scientifically proven fact that the raw materials needed to make antibiotics can be produced from potato starch, glucose and molasses, which are easily available in Bangladesh.

However, the API industry has not developed so much as the finished drug industry in Bangladesh. The finished drug industry has not only carved a niche, it is flourishing day by day.

The pharmaceutical sector meets almost 97 percent of local demand, while local drug makers produce only 5 to 7 percent of the total API requirements in Bangladesh. The rest or bulk volume of API is imported.

Although there are about 250 licensed drug manufacturing units in Bangladesh, only a few produce API, that too on a limited scale.

If the market size of finished drugs is worth about Tk 8,000 crore, the size of the API sector would be Tk 3,500 crore to Tk 4,000 crore, according to industry insiders. So, the API sector can be developed as a thrust sector with a potential of 100 percent value addition.

An API is the substance in a pharmaceutical drug or a pesticide that is biologically active. In general, API is the raw material for finished drugs or medicine.



AMRAN HOSSAIN

A chemist is at work in a laboratory of an API factory.

Industry people say the opportunity of API manufacturing is huge and 100 percent value addition is possible.

Although the government announced to set up an API park a few years back, progress is slow.

The industry insiders said the API sector is fast-flourishing in neighbouring India.

"Indian drug makers are now focusing more on API instead of finished drugs. Their government is also providing incentives to the API sector to encourage them," said MM Asad Ullah, a product manager of Square Pharmaceuticals.

Although Square has regulatory approval to manufacture 40 types of

API, the pharma now produces only 4 types of basic raw materials, and 15 types of secondary raw materials.

"Unless a common API park is set up, it will be tough for the Bangladeshi companies to compete with India and China in future," Asad said.

Saifur Rahman, managing director of Active Fine Chemicals, a company that engages in manufacturing only APIs, said: "Most of the biological APIs have the potential to be 100 percent value added."

Seeing enormous potential, the company started commercial production in 2009 and aims to be a leader in API manufacturing in Bangladesh. It

is presently producing four APIs, while it sought regulatory approval for 11 other APIs.

"These biotechnology products will also have direct effect on the country's agriculture and foreign currency reserve, as these products are fermented with potato starch, glucose, molasses and so on," he said.

For example, he said, antibiotics are made from key raw materials called 'erythromycin', 'penicillin' and 'cephalosporins'. These key raw materials are converted into high potency antibiotics, such as Azithromycin, Cefexim, Ampicillin and many more.

Sixty to eighty percent of the cost of production of these antibi-

otics is related to those key raw materials.

Right now, all these antibiotics and other biological APIs are imported from foreign countries. If these key raw materials and all related antibiotics (and other biological APIs) can be manufactured here, foreign currency worth more than Tk 1,200 crore can be saved per annum, said the industry people.

"At that stage, we will only use local raw materials, such as molasses, glucose and potato starch to produce these key raw materials and the final APIs. Such ventures will enable us to add almost 100 percent value, locally," he said.

He said the total Bangladeshi market for antibiotics will require 300 tonnes of erythromycin a year. "Manufacturing this product in Bangladesh will require us to restart the potato starch plants."

"These potato starch plants have been shut down for the last 5 years due to no local consumption. Potato produced in Bangladesh is being wasted due to a lack of use. Hence, our ability to penetrate into the local antibiotics market will enable us to serve the agricultural sector," he said.

It will also create new opportunities to export, he said, adding that it would create jobs for thousands of people in the country. "Of course it will have a positive impact on agricultural output."

The success of Active Fine Chemicals also encourages other leading drug makers to go for API manufacturing in full phase.

Those who are already producing one or two APIs are now thinking about setting up separate units for API production, while many others are looking to start API manufacturing. Incepta, Renata and Orion are a few names here, industry people said.

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From a vision to reality



Saifur Rahman

SARWAR A CHOWDHURY

ENGROSSED in an academic research paper on chemical engineering at a university in the USA, an idea flashed across Saifur Rahman's mind. He thought to himself, why not apply the research findings to his homeland, Bangladesh.

He looked into the scene in Bangladesh and found that only a few companies were engaged in his area of interest, operating on a limited scale.

"Seeing this, I decided to start work in the untapped API market in Bangladesh."

His research paper was on the biologically originated raw materials of finished drugs, which means, active pharmaceutical ingredients (API).

The Daily Star recently sat with Rahman who shared his ideas about the API industry in Bangladesh.

"I returned to Bangladesh in 2005. As I have the academic background and knowledge on API manufacturing, I conducted a study on the local market in 2006-07," he said.

He found the market to be unused and set up a company named 'Active Fine Chemicals Ltd', focusing to produce only APIs.

"While I was doing my research, I saw it from a commercial point of view rather than from a research point of view. That is why it was easier for me to start the API business," said the 32-year-old.

At initial stages, he started simple reagent production. "After receiving a huge response from the local drug companies, we moved forward to manufacture APIs," he said, adding



AMRAN HOSSAIN

A view of the factory floor of Active Fine Chemicals Ltd in Muktarpur, Munshiganj.

that his company studied 46 life saving drugs to see the opportunity of API demand here.

So far, the response from the local drug manufacturers has been positive. "Companies like ACME, Alco, Modern, Rangs, Renata, Apex and Popular are our clients," he said.

The API market is growing very fast. "Within the next 2-3 years, we will be able to produce 100 percent of the raw materials required for antibiotics, and there will be no need to import API for antibiotics then," he added.

"My dream is to invent a 'block-

buster drug' that no one invented in our country," he said. "However, strong research and development will be needed for this, as a lack of skilled manpower in the API sector is a problem for us."

"If we could create a strong research and development team, it would be possible to invent a blockbuster drug in the next 10 years," he said, adding that investment in time, money and foreign expertise will be key factors here.

And finally, government support will be needed, he said.

In India, the government is giv-

ing incentives to the API sector, which helped the industry grow at a faster rate, he said.

The government promised to set up an API park, but it is yet to be done, he added.

"If the park is set up as early as possible, it will accelerate the API industry's growth."

Active Fine Chemicals is also listed on the Bangladesh stockmarket. It raised capital from the public to meet its financial needs.

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