India's safflower passion may open new markets

The GRDC-sponsored 7th Annual International Safflower Conference was told there is the potential for Australian farmers to fill supply shortfalls in the large and growing safflower market in India.

BY KELLIE PENFOLD

■ Mumbai-based health, hair and skin care company Marico Ltd is like many rapidly growing businesses in India. Turning over US$477 million annually it is enjoying annual growth of 25 per cent, riding the wave of the cashed-up Indian consumer.

Nitin Kathuria, the buying manager at Marico, negotiates with traders to buy safflower seed for oil, which is packaged and sold as Saffola into a market moving from bulk oils to packaged products. The trend towards supermarkets in India means customers are able, for the first time, to pick and choose products off the shelf, rather than buy at markets or direct from processors, such as the numerous safflower oil crushers in rural towns.

Speaking at the conference at Wagga Wagga, NSW, Mr Kathuria said that increasing pressures on land and rising input costs – particularly that of labour – meant Indian safflower production may not meet future domestic demand.

"It is still considered a minor crop in India and is grown as a rain-fed mixed crop with sorghum or wheat," he said. "It follows the monsoon crop, usually soybean, in the dry season."

The average yield of a safflower crop in India is 650 kilograms a hectare and it costs the farmer $184 a hectare to grow, returning an average profit of $174/ha.

The main reasons for low productivity, according to Mr Kathuria, are poor quality seed, small land holdings, poor crop management and inadequate irrigation.

Dr Nandini Nimbkar from the Nimbkar Agricultural Research Institute (NARI) in Maharashtra, India, explained that R&D at NARI seeks to lift the profitability of the Indian-grown safflower by breeding new varieties, providing agronomic guidance and adding value by creating a market for the flowers as a health food and as a natural dyeing agent.

PHOTO: KELLIE PENFOLD

Nandini Nimbkar, president of the Nimbkar Agricultural Research Institute (NARI) in Maharashtra, India, told the conference of research work to encourage Indian farmers to stick with safflowers.

PHOTO: BRAD COLLIS

PHOTO: KELLIE PENFOLD

Nitin Kathuria from health food and personal care products company Marico, based in Mumbai, India, where sales are growing by 25 per cent a year.

Half the area sown to safflower in the world each year is in India (364,000ha), equating to 27 per cent of world production.

Dr Nimbkar said the challenges facing growers are the low oil content of Indian safflower (about 30 per cent compared with nearly 45 per cent in Australian and US varieties), a fluctuating market caused by rapid consumer switching to cheaper oils such as palm oil in response to price increases, and susceptibility to pests and diseases.

She said economics have had the greatest impact on production over the past eight years. While production costs (mainly labour) have risen by 24 per cent, the market price for safflower in India has increased by 100 per cent.

In addition to oil, the market for safflower flowers has begun to bloom, particularly in China. NARI has also been test-marketing the flowers as a herbal tea.

The flowers are worth up to 400 rupees a kilogram, as opposed to 20 rupees/kg for seed. The constraining factor has been that the traditional varieties are spiny, making them difficult to harvest by hand. NARI has now developed a vacuum handpiece that allows workers to suck the flowers from the inflorescences.

Spiny and non-spiny varieties, such as NARI-38, which achieved a yield of more than 2t/ha in trials in 2007, have recently been released. NARI has also established fertiliser regimes for optimum yield, and trials have shown irrigation can lift yields by up to 45 per cent.

"However, irrigation brings with it other challenges such as disease, particularly if watered post-flowering," Dr Nimbkar said. "And yield loss to aphids can be as high as 74 per cent." □

More information: Marico Ltd, www.marico.com; Nimbkar Agricultural Research Institute, http://nariphaltan.virtualave.net

BIOTECHNOLOGY NEEDED TO SUSTAIN OILSEED SUPPLIES

■ Although global oilseed supply has increased from 382 to 418 million tonnes in the past five years, that pattern may not continue into the future, according to Lorin DeBonte, the assistant vice-president of R&D and technical director of specialty oils for the US-based Cargill, Incorporated.

To provide some consistency for oilseed growers – in a time of climate change – biotechnology and genetic modification could provide the answers, Dr DeBonte said.

"In the next five years, to remove some of this threat, we need yield gains of 20 to 30 per cent and this is where genomics can be of tremendous assistance. And at the same time we need to be good environmental stewards," he added.

"The use of plant biotechnology can increase tolerance to drought and extreme temperatures, minimising production risk in oilseed supply."

The world oilseed market is dominated by four major crops – palm (38 per cent), soybean (28 per cent), canola (15 per cent) and sunflower (nine per cent). Thirty-three per cent of all oilseeds come from South America, 22 per cent from the US, 14 per cent from China and one per cent from Australia.

The greatest growth has been in palm oil production, with 1.3 million hectares dedicated to new plantations – mainly in Indonesia and Malaysia – in the past three years. Palm nuts yield 5,000 litres of oil per hectare, as opposed to canola which yields 1,000L/ha.

However, Dr DeBonte said that with soybean production for human consumption in decline due to biodiesel demand, demand for canola oil could increase, which could, in turn, increase demand for safflower oil.

"You can't build growth in safflower, you have to create a market which pulls it, just as happened with canola," he said.

"Twenty years ago I remember trying to get people to grow one acre of high-oleic canola for Cargill. Today we buy the production of 1.4 million acres. Creating a market is a struggle, but if you stay at it, it will happen."

The oilseed supply threats listed by Dr DeBonte included:

- depletion of productive soils;
- a failure to develop crops with higher protein or oil content;
- biofuel demand;
- increased disease and pest pressure due to intensive agriculture;
- narrowing genetic diversity; and
- climate change. □

More information: www.cargill.com

Cargill assistant vice-president, technical director specialty oils, Dr Lorin DeBonte, spoke at the International Safflower Conference.
PHOTO: KELLIE PENFOLD