

A quintessential ingredient

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AZHARI ELTIGANI ELSHEIKH HAMOUDA holds an MSc from the University of Khartoum and qualifications in environmental and developmental studies. He is also currently studying for an MBA with the University of Cumbria in partnership with the Robert Kennedy College in Zurich. He worked with US-Aid and later the Arab League in Tunis before returning to Sudan to establish a company specialised in exporting Hibiscus, sesame and other agricultural products. He subsequently established Migana Industries in 2005, when the opportunity arose with the liberalisation of the sector in Sudan. Today Migana is one of the world's most important suppliers of Gum Arabic to international companies.

Few people are probably aware that one of the most widely used products around the world today is a resin that is still extracted by hand from wild Acacia trees in Africa's Sahel region, the vast swathe of savannah stretching from Somalia on the Indian Ocean to Senegal on the Atlantic.

Used for more than 4,000 years, Gum Arabic is an ancient resource that is set to play an even bigger role across a growing range of industries.

Gum Arabic is made from the hardened sap from two species of the acacia tree; *Acacia senegal* and *Acacia seyal*. The resinous liquid seeps out after the bark is cut and thickens on contact with the air, forming a hard and glassy gum. This process is called "gummosis" and usually lasts from three to eight weeks.

Also known as acacia gum, *chaar gund* and *meska*, this miracle product is not only perfectly safe for human consumption, but ongoing research has established its many health and dietary benefits. Essentially, it is a stabilizer, a binder, an emulsifier or a viscosity-increasing agent, used not only in confectionery, soft drinks, wine, liquor, and dietary fibre, but also for non-food products such as pharmaceuticals, cosmetics, printing, ceramics, photosensitive chemicals, textiles, paper, ink, paints and adhesives.

A complex mixture of polysaccharides and glycoproteins comprised mostly of galactose, arabinose, rhamnose, and glucuronic acid, Gum Arabic has its own E number: E414. It also contains a small amount of protein: 18 different amino acids have been identified in *acacia senegal*.



Gum Arabic readily dissolves in water to form highly concentrated solutions of relatively low viscosity, which is a consequence of the gum's compact structure. Being both hydrophobic and hydrophilic, Acacia Gum is perfectly suited as a stabiliser of colours and flavours held in emulsion.

The Chinese and Japanese were already using acacia gum for painting in 4,000 BC, while it also played an important role in Ancient Egypt 1,500 years later, applied as a pigment binder for paints in hieroglyphs.

With the industrial revolution, acacia gum, by now known as Gum Arabic, was used for textiles, as well as lithography, and as an ingredient in early photography.

Sudan produces the finest gum arabic

A semi-arid zone species, the Acacia is drought resistant and able to regenerate naturally from seeds or from copies. The densest areas of acacia forest are in central Sudan, making the country the biggest producer and exporter of the best quality Gum Arabic, supplying up to 80 per cent of annual world requirements. While many processed food ingredients can provide flavour stability, Gum Arabic is a natural, sustainable, vegan clean label product that promises to provide a viable alternative to chemically produced ingredients.

As an entrepreneur, I have worked for more than 25 years in the Sudanese agricultural export sector and set up Migana Industries after the Sudanese government liberalised the Gum Arabic sector. Migana is involved at every stage of production, from harvesting to export, based at its factory in Khartoum, where some 5,000 metric tonnes are processed. Migana has warehouses in El Obeid and Al Nuhud (both production areas for Gum Arabic) where raw gum is received and then checked and graded. It is then transported to warehouses in Soba, Khartoum for analysis in the company's laboratories. From there it is loaded into containers for export.

Migana has a 50 hectare Acacia nursery and research centre in Al Nuhud (south of Khartoum). This project, launched eight months ago in collaboration with the University of Cumbria, is the only project of its kind in Sudan.

With a view to expanding our presence in the United Kingdom, we have a strategic agreement with Juniper Global Ltd, a UK based agri-trading company that was formed in 2010, and which functions as the sole marketing

and sales arm of Migana, Our presence in the United Kingdom for the past eight years facilitates and covers the issuing of contracts, banking and logistics. Our UK-based managing director, Rimon Yousif, has built Juniper into a leading supplier of natural agricultural products, specialising in the export of Gum Arabic and senna pods to international markets. Through his efforts Juniper enjoys partnerships and joint ventures at both ends of the supply chain – from direct reach to farmland and agricultural projects and operations in Sudan to global manufacturers on an international platform.

Juniper's knowledgeable and professional management team help inspire, guide and problem-solve for our customers and abide by ISO standards while implementing an active Corporate Social Responsibility (CSR) programme. In order to ensure CSR values are visible in our supply chain, we have opened dialogue with our suppliers to ensure CSR compliance and implementation, especially in the areas of labour standards, environment and anti-corruption. We work with innovative, competent and participatory partners, who contribute effectively to the strength of our supply chain.

We are now building solid relationships with local, regional and international businesses to create and stimulate opportunities for cooperation and investment that involve constructing a global integrated industrial structure for Gum Arabic processing to meet increasing international demand. Migana is now among the leading Sudanese companies in the sector and is the main approved supplier for most international importers.

A commitment to development

Gum Arabic also has the power to drive development in the 19 African producer nations, already providing a living to at least 10 million people. A promising commodity for producing countries, it has the potential to generate foreign exchange, promote sustainable agriculture and forestry, ensure food security and combat desertification and climate change.



In Sudan, Gum Arabic creates an important value chain that includes tree cultivation, harvesting, drying, cleaning, sorting, grading, transportation, storage, processing, marketing and industrial application.

Migana works with local suppliers to provide natural and safe products that are ethically sourced, as well as ensuring full traceability. In the United Kingdom, through Juniper Global Ltd, there is close liaison with customers to supply high quality products consistently and continual R&D to benefit our customers from ongoing improvements. We always operate as an ethical and responsible organisation and our relationship with our distributors is crucial and the aim is to establish long-term, strategic partnerships with both our suppliers and customers.

The transformation of Gum Arabic production into more income-generating activities can not only promote economic development through higher incomes, but also to secure rural livelihoods, empower vulnerable groups, including women, and promote synergies with natural resource management and climate change mitigation.

Migana promotes the protection of gum trees through longer concession rights, which in turn encourages concession holders to protect trees and plant new ones. The company works to prevent over-harvesting and improper wounding of gum trees by applying best practices. Proper tapping can have a positive effect on the long-term productivity of trees.

Demand for acacia gum is steadily increasing in Europe: in the past five years, demand has grown by an estimated 2.5 per cent annually. Germany, the United Kingdom and Italy already import considerable amounts of acacia gum, but do so from other European countries. France has established itself as an important intermediary and exports two-thirds of all processed Gum Arabic, although growing numbers of manufacturers in the United Kingdom are seeing the benefits of buying through local suppliers that purchase the finished product in powder form direct from Sudanese companies such as Migana Industries.

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Left: Among the multiple uses of the sap of the Acacia tree: stabiliser, binder, emulsifier

Right: Three generations of the Elsheikh Hamouda family are now involved in Migana

