

Nigerian companies ramp up production to meet high demand for GMO cowpea seeds

Nigeria's private local seed companies are expanding production of genetically modified (GM) cowpea seeds to supply farmers eager to grow the pest-resistant crop.

Farmers faced a [widespread shortage](#) of the now commercially available GM cowpea seeds last year as strong demand for the variety outstripped supply. The crop increases yields, while slashing the need for pesticides. As a result, farmers earn higher profits while reducing the environmental and health impacts associated with pesticides.

Public sector scientists at the Institute of Agricultural Research (IAR) at Ahmadu Bello University developed the variety and are now relying on local seed companies to multiply and distribute the seeds to farmers. Anthony Arokoyo, a seed certification officer at the Nigerian Agricultural Seed Council, said more companies need to be enlisted.

"I will employ the research institute to multiply it more so farmers can get [the seeds]. So far, they have selected only few companies to get it. We need more to be involved in production and multiplication to farmers. From all that I tell you, it is a good variety," he observed.

Rose Gidado, deputy director of the National Biotechnology Development Authority, said plans are underway to expand on the production of the certified GMO cowpea seeds. "The public institutions do not engage in commercialization," she explained. "Everything has been handed over to seed companies. But I think we need to add more seed companies. Maybe two more. If we start with five, it's fine, so that more seeds will be grown. More seeds will be multiplied in order to meet the demand. The demand is so high."

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Onyibe Onyisi John, managing director of Gold Agric Nigeria Ltd., one of three local seed companies currently licensed to distribute authentic GM cowpea seeds to farmers, said they are expanding production of the certified seeds. The cowpea planting season is expected to begin in July.

"We have already decided to multiply some in rainy season and dry season to get enough volumes to sell... January, we are planting. We will harvest around March to April so that we will have enough to give to the farmers in 2022," he told the Alliance for Science in an interview.

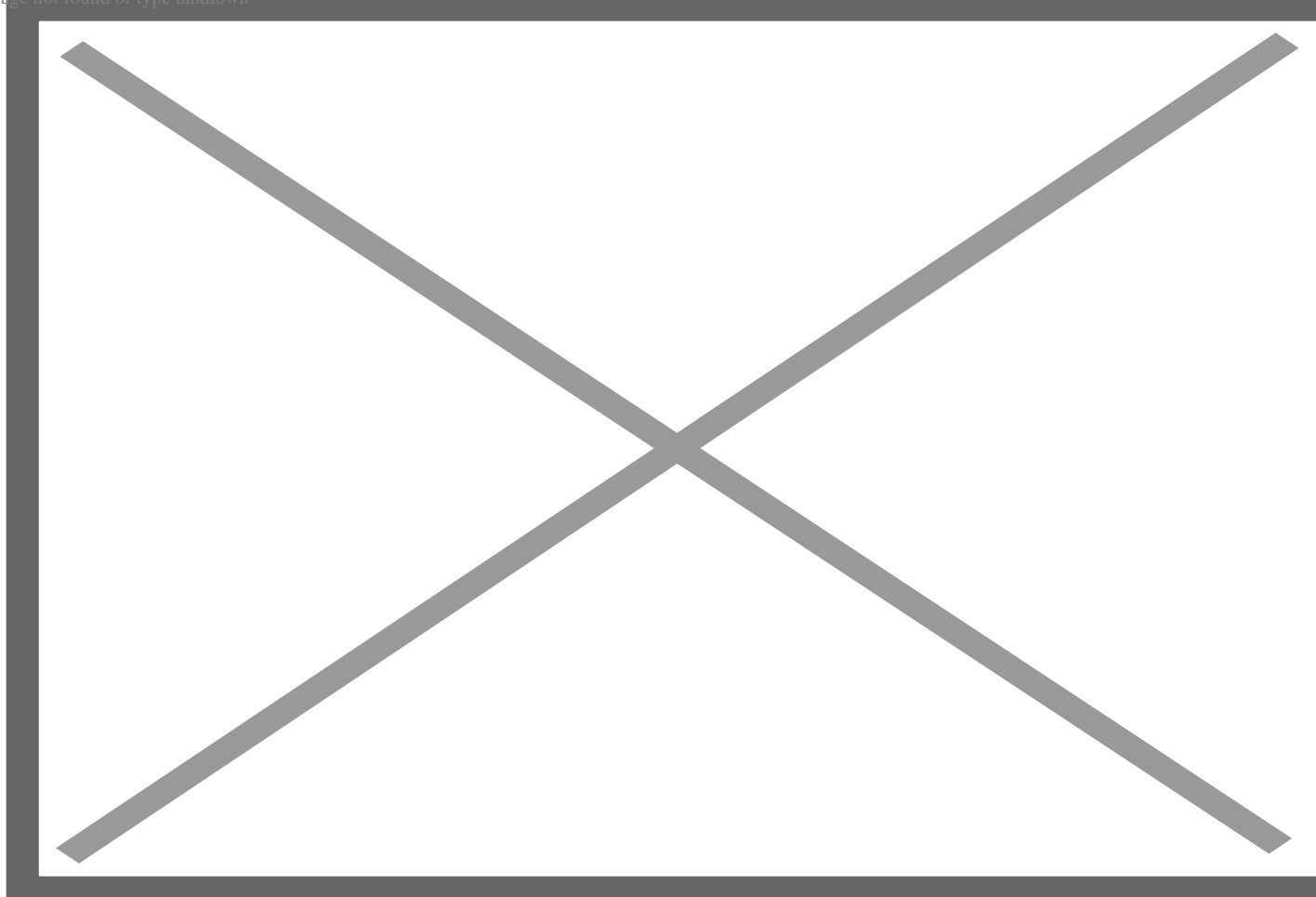
Incorporated in 1997, the Kaduna State-based company describes itself as a science-driven entity with offices across the country. Last year, the company marketed 2.5 metric tonnes of certified GM cowpea seeds supplied by the IAR. The inventory was exhausted within weeks.

"We have also indicated our interest in the GM maize," he observed. "We want to market it too... For the seed companies, we have a lot of work to do to ensure quality is being maintained and demand is being

met.”

Maina Seeds, based in Kano State, is also licensed to trade in GM cowpea seeds. Last year, it sold 2 metric tonnes of certified GM cowpea seeds — also supplied by the IAR — which was insufficient to meet demand. Benjamin Ameh Abraham, administrative officer at the company, said they are also multiplying foundation seeds they have acquired from IAR to produce more certified seeds for farmers.

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“We demanded foundation seeds, and so far, they’ve given us up to 80kg of foundation seeds. And that 80kg, we’re going to plant it on four hectares. With all agronomic practice, we’re going to have more to sell to farmers. Presently, we have planted that foundation seed in our farms and with high expectation that we’re going to meet up to the market demand,” he explained.

Tecni Seeds Ltd., also based in the Kano State, is the third local seed company licensed to sell GM cowpea seeds. The company sells almost 7,000 metric tonnes of various conventional seeds every year and in 2021 sold about 2.5 metric tonnes of GM cowpea seeds. Bala Dari Kayi, general manager for Tecni Seeds Ltd., said they are also expanding their fields for multiplication of GM cowpea seeds. He told the

Alliance for Science they are building adequate capacity to protect the purity of the certified GM cowpea seeds to increase farmer confidence in the variety.

“We have to think of integrity and our customers. Once a customer is cheated once, he will run away from you. Tecni seeds, we have taken extra measures to avoid adulteration. Then there is the regulatory body, National Seed Council, that monitors our activities from site selection to harvest, and also production and packaging. So, with all of these in place, cases of adulteration will be curtailed,” he assured.

Benefits of GM cowpea

Cowpea is a high-protein staple food crop consumed by an estimated 200 million people in Africa daily. It's usually cooked and eaten with carbohydrate sources like plantain and rice. Though Nigeria is Africa's largest producer of cowpea (popularly called beans), its annual production deficit stands at more than 500,000 metric tonnes.

Much of the shortfall can be attributed to the destructive [Maruca pod borer](#) pest, which can cause 100 percent yield loss. The insects are particularly devastating because they damage not only the flowers and the buds, but also destroy the pods of cowpea, resulting in huge grain loss. Farmers have to spray their fields with pesticides at least 8 times in the 12-month life cycle of the crop.

But the GM cowpea, also known as pod borer-resistant (PBR) cowpea, provides inherent protection from the pest due to the introduction of a gene from *Bacillus thuringiensis* (Bt), a naturally occurring soil bacteria widely used in organic agriculture. Nigeria is the first country in the world to commercialize GM cowpea. Farmers growing the variety [now spray their fields](#) less than two times per growing cycle, thereby increasing their profit and protecting them from pesticide poisoning.

Nigeria is gradually positioning itself as a leader in agricultural innovations with research advances and approvals for GM cowpea, maize, rice and cotton in recent years. These varieties offer pest-resistance, climate-resilience and other traits that farmers and consumers have begun enjoying.

Joseph Gakpo is a journalist for many Ghanaian outlets, has a master's degree in communications studies from the University of Ghana and writes for the Alliance for Science. You can follow Joseph on Twitter [@josephopoku1990](#)

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