



TOP

10 FACTS

about KingaKUU Cassava in Kenya



FACT 1

KingaKUU cassava has high potential to improve cassava harvests in East Africa



- KingaKUU cassava varieties are disease resistant and will empower East African smallholder farmers and improve their socio-economic welfare.
- KingaKUU cassava varieties were developed through a collaborative project between the Kenya Agricultural Research and Livestock Organization (KALRO) and international partners.
- KingaKUU cassava has shown robust and durable resistance to cassava brown streak disease (CBSD), validated over multiple cropping cycles in several locations in Kenya and Uganda.
- Cassava brown streak disease is a uniquely East African challenge that demanded a Kenya-led solution. KingaKUU cassava was developed specifically to address threats to local food and income security.



- Cassava is the second most important food crop after maize in the coastal and western regions. The crop can immensely contribute to increased food security in the country in line with the Government's Agenda.
- In severe infections, CBSD can result in up to 100% loss of usable storage roots. KingaKUU cassava will increase production and contribute towards better protection and higher incomes.
- Cassava is a potential industrial crop, especially in production of animal feed, starch, flour and ethanol, hence its contribution to the manufacturing pillar of the Government's Agenda.

FACT 2

**KingaKUU
cassava will
significantly
contribute to
Kenya's food
security agenda**



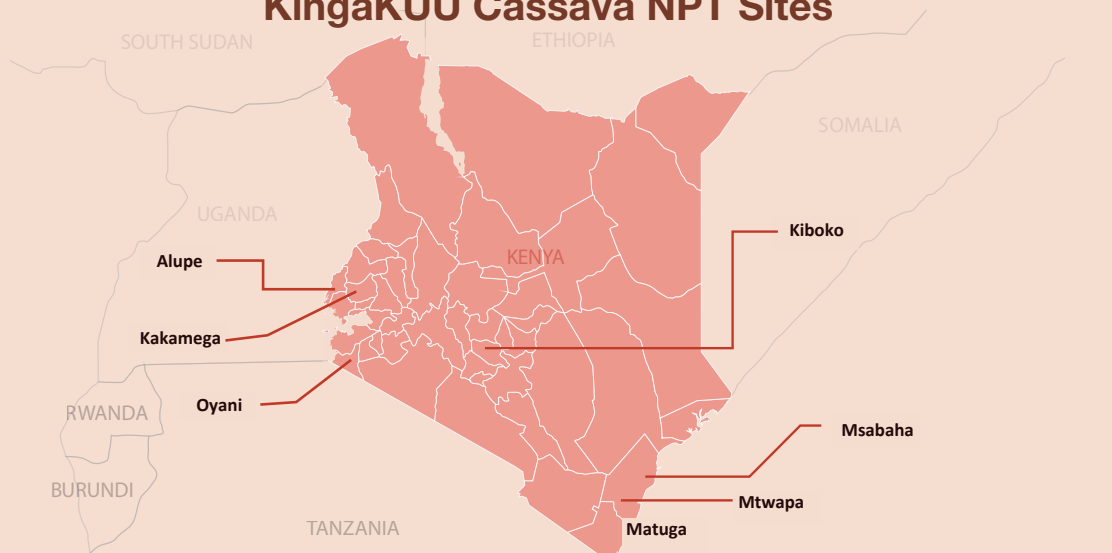
FACT 3

Development of KingaKUU cassava embraced teamwork and collaboration



- KingaKUU cassava was developed through a collaborative program between the Kenya Agricultural and Livestock Research Organization (KALRO), and several public and non-governmental organizations in Kenya, Uganda, Rwanda, and USA.
- KALRO is composed of semi-autonomous institutes established under the Kenya Agricultural and Livestock Research Act of 2013. The Act recognizes the role of universities in research and provides for partnerships with them as associate research institutes.
- The Kenya project team comprised KALRO and University of Nairobi scientists, International Service for the Acquisition of Agri-biotech Applications (ISAAA) AfriCenter, which provides communications support, and International Institute for Tropical Agriculture (IITA) for technical backstopping.

KingaKUU Cassava NPT Sites



- Since 2011, project researchers have been growing and evaluating disease resistant cassava in three diverse locations in Kenya - Kandara, Mtwapa and Alupe.
- KALRO Kandara hosted regulatory and breeding trials due to its suitability as a no-disease site.
- KALRO Mtwapa and KALRO Alupe are hotspot areas for both CBSD and CMD. The two sites were used for yield selection and trait selection trials.
- National Performance Trials (NPTs), a routine requirement for all new crop varieties and an essential step in demonstrating value for cultivation and use prior to registration and release to farmers, were successfully completed across 7 sites in eastern, western and coastal Kenya.

FACT 4

**KingaKUU
cassava
research trials
were carried
out in several
sites across
the country**



FACT 5

A range of proven technologies were used to develop KingaKUU cassava



- KingaKUU cassava was developed using conventional plant breeding, and modern biotechnology tools.
- KingaKUU cassava combines resistance to CBSD and CMD, plus all other farmer-preferred characteristics, and is suitable for all cassava-growing regions across East Africa.
- The technology used to develop KingaKUU cassava varieties has also been used to develop other products that have been authorized by regulatory agents globally for example, beans, papaya, plum, potato, cucumber, zucchini and watermelon.

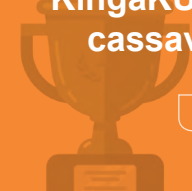




- KingaKUU cassava has been evaluated in multiple regulatory field trials in Kenya and Uganda. The necessary regulatory studies and performance trials have been completed and an Environmental Social Impact Assessment study report submitted to NEMA in anticipation of placing on the market.
- KingaKUU cassava varieties with resistance to CBSD, CMD and other desirable agronomic characteristics complied with regulatory processes as outlined by the Kenya National Biosafety Authority (NBA).

FACT 6

Strict adherence to Kenya's biosafety regulations was observed in developing KingaKUU cassava



FACT 7

KingaKUU cassava is safe for the environment



- In compliance with regulatory requirements, all genetically modified (GM) crops must be assessed for environmental safety before they are released to farmers. Development of KingaKUU cassava was monitored by the National Biosafety Authority (NBA) and other regulatory agencies as stipulated by Kenya's Biosafety Act of 2009.
- KingaKUU cassava does not have a fitness advantage over conventional cassava that would render it more weedy, or invasive in natural habitats. In addition, this cassava is developed for disease resistance meaning there are no non-target species.
- There is no potential of cross-pollination from CBSD resistant KingaKUU cassava to conventional cassava because cassava cultivars are propagated exclusively from stem cuttings.



KingaKUU planting materials will be accessible to farmers

- KingaKUU cassava varieties are poised to safeguard yields, increase earnings, and enhance food security.
- Once approved for commercialization, KingaKUU cassava varieties will be readily available at a comparable cost to conventional variety.
- KALRO has established a sustainable and efficient cassava seed production and distribution system through Cassava Seed Entrepreneurs, meaning KingaKUU cassava will be accessible to farmers.



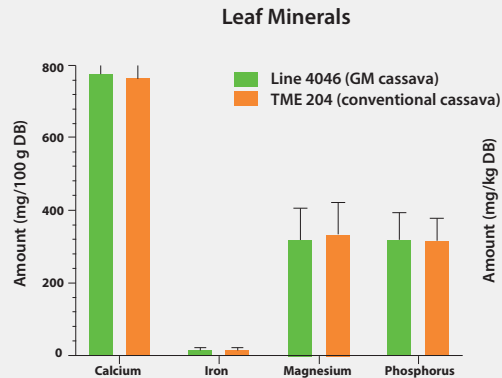
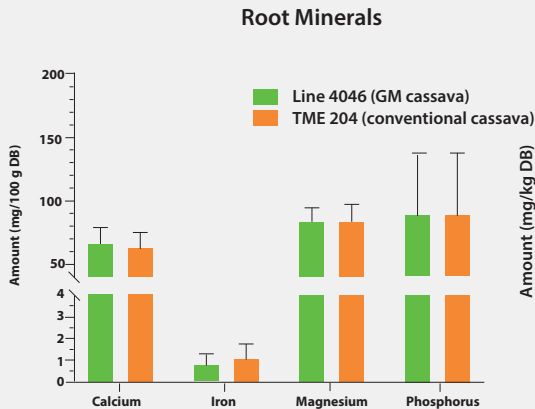
FACT 9

Development of KingaKUU cassava incorporated public participation in line with Kenya's Constitution



- Public participation was integral in development of KingaKUU cassava to enhance community ownership of public decisions in accordance with the Kenyan Constitution. Over seventy public engagement activities have been carried out.
- Farmers, youth, policy/decision makers and value-chain actors have been sensitized about KingaKUU cassava through appropriate awareness platforms and field visits to experimental sites. Innovative approaches to public participation included seeing-is-believing tours, real-time process documentation, scientists-journalists mentorship, Science Cafes and grassroots outreach.
- Farming communities were extensively engaged during the conduct of Environmental and Social Impact Assessment (ESIA), in accordance with the law.





- Research on GM crops has indicated that incorporation of disease resistant traits has no known significant impact on the composition of key nutrients and anti-nutrients.
- Compositional assessment was carried out on KingaKUU cassava and conventional cassava in compliance with the Organization for Economic Cooperation and Development (OECD) guidelines, and international guidelines on food safety, which Kenya has domesticated.
- No changes were observed in nutrient composition/nutritive value when sample leaves and storage roots of KingaKUU cassava and conventional cassava were analyzed.

**KingaKUU
cassava is safe
for human and
animal
consumption**





Better production

Improved yield

Higher income



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Citation: Top Ten Facts About KingaKUU Cassava in Kenya (2025). Nairobi, Kenya: ISAAA AfriCenter