

Aflasafe® and aflatoxin

Basic questions and answers



Like books, do not judge your food by its cover. Which of these is aflatoxin-contaminated?

The mouldy ones? The 'clean' ones? It could be either, or neither. Find out why! With aflatoxin, its stealth is its strength, which is what makes it so deadly.



What is aflatoxin?

- Aflatoxin is a poison produced by the fungus *Aspergillus flavus*.
- This fungus resides in soil and infects crops in the field.
- Aflatoxin contaminates up to 65% of maize and groundnut crops.
- More than 95% of children under five in some countries have aflatoxin in their body signifying high exposure.
- Aflatoxin affects many other crops such as melon seeds and rice.



Which of these have aflatoxin? Without a chemical test, it is impossible to tell. According to Barbara Stinson, Project Director at the African Union's Partnership for Aflatoxin Control in Africa, "The fuzzy, green fungus alone isn't a dead giveaway that the toxin is present." Similarly, the 'clean' look does not mean that the food is aflatoxin-free. Aflatoxin in food is measured parts per billion (ppb). The Nigeria and European Union safety level is 4 ppb, 10 in Kenya, and a maximum of 20 ppb for most foods and animal feeds in USA. Picture that in parts per billion! We cannot see, smell or taste aflatoxin even when its level is lethal.

How does aflatoxin harm us?

- Causes liver cancer and sometimes death; suppresses the immune system and stunts child growth.
- Contaminated feed kills chickens and decreases productivity and profitability of livestock.
- Crops with higher than permissible aflatoxin levels are either forced into low-value markets or destroyed.



The difference that Aflasafe makes: Aflasafe-treated maize in poultry feed (left) reduces broiler mortality by 40% compared with farmers' feed (right).

What is Aflasafe?

- IITA and partners have developed the biocontrol product Aflasafe, which drastically reduces aflatoxin in crops.
- Aflasafe contains native non-toxic strains of *Aspergillus flavus* that out-competes toxin-producing ones when applied in the field.
- When Aflasafe is correctly applied and all facilitative conditions are met, farmers in several countries consistently achieve 80% to 99% reduction in aflatoxin contamination in their maize and groundnut fields.
- One application of Aflasafe every cropping season provides protection from aflatoxin in a cumulative manner, along with attendant health benefits.

Aflasafe's protection continues postharvest, and is further optimised by proper drying and storage



The Aflasafe manufacturing plant at IITA's Business Incubation Platform in Ibadan, Nigeria.

What are the benefits of Aflasafe?

- Significantly lower aflatoxin contamination in food and feed.
- Healthier farm families and more income.
- Productive animals and increased profitability from poultry.
- More trade opportunities, with produce meeting market requirements.

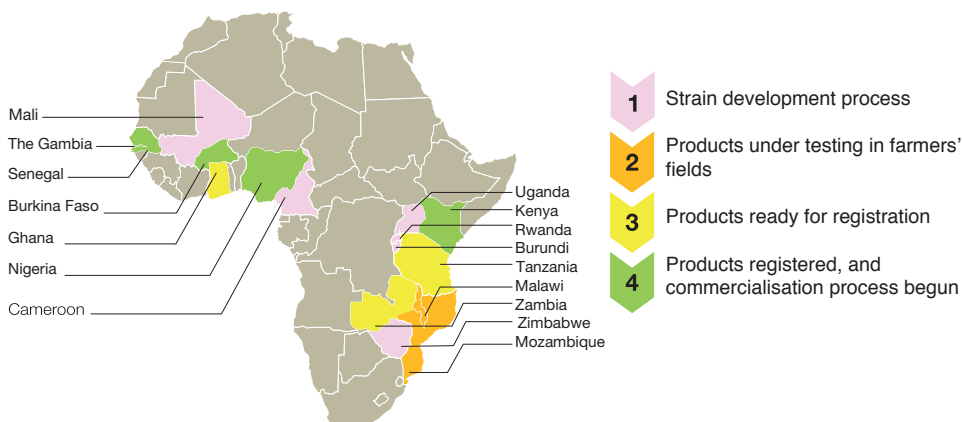


Aflasafe is currently packed in handy 2.5- and 5-kilo bags for easy application by smallholders.

What is the status of aflatoxin biocontrol R4D?

- A manufacturing plant capable of producing 5 tons of Aflasafe per hour is operational at IITA headquarters in Nigeria. Another is under construction in Kenya (10 tons per day), and a third on the way in Senegal.
- Local versions of Aflasafe products registered for use in four countries.
- Product development is at various stages in the R4D continuum in nine other countries.
- Farmers in Nigeria, Kenya, Senegal and The Gambia continue to treat tens of thousands of hectares of maize and groundnut fields.
- AgResults Project incentivizing private sector to scale-up Aflasafe use by thousands of maize farmers in Nigeria.
- A Tech Transfer and Commercialization initiative underway (ATTC Project).
- All our aflatoxin R4D work is in support of the African Union's Partnership for Aflatoxin Control in Africa (PACA).

Aflasafe in Africa – Where we are



What are the future plans for aflatoxin prevention?

- Scaling up and commercialization through private (eg, agribusiness), public (eg, government institutions) and public-private partnerships.
- Set up modular Aflasafe manufacturing plants to encourage local production and adoption (eg, Kenya, Senegal).
- License a mix of manufacturing, marketing and distribution roles to private/public sectors.
- Provide stewardship and technical backstopping to the licensee.
- Develop new Aflasafe products for countries not currently covered by aflatoxin biocontrol research-for-development programme

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For more information on aflatoxin and Aflasafe

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