PRACTICE Abstract



Linking East and West African farming systems experience into a BELT of sustainable intensification

## Retrieving Traditional Knowledge: Cassia nigricans as a Sustainable Biopesticide for Small-Scale Farmers in Burkina Faso

Practice Abstract n.3

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An EWA-BELT project study in Burkina Faso (Léo area) uncovered farmers' traditional knowledge about Cassia nigricans, a locally available leguminous plant, and its pest-repellent properties. Once used during the storage phase, this practice was lost over the past 20 years. Farmers and researchers decided to test Cassia nigricans-based leaf extracts as a biopesticide for cowpea (Vigna unguiculata), this time during the crop growing phase. Field trials compared Cassia nigricans extracts to Neem extracts-based biopesticides and untreated fields. The application method mimicked Neem extract use, a widespread technique in the area and already familiar to the farmers, though Neem being an alien species with some off-target negative effects. In particular, leaves of the chosen plant (Neem or Cassia nigricans) are harvested (2-3 L), crushed in a mortar, mixed with 10 L of water (hot water for Neem), left to soak for 24 hours. Then, after filtering the mix, 10 extra L of water and an adhesive substance such as soap (2-3 tbs.), to extend the efficacy of the product, are added. The obtained biopesticide is then sprayed on cowpea leaves before sunrise or at sunset, every 3–5 days, from 60% flowering until the beginning of fruiting. Over three growing seasons (2022-2024), Cassia nigricans-treated fields showed yields comparable to Neem-treated fields, a slightly better pest control compared to Neem-treated fields and significantly better yields and pest control than control untreated fields. Encouraged by the results, farmers have started independently using Cassia nigricans extracts on other crops, such as maize and sorghum. Wider adoption could boost yields and incomes for small-scale farmers while reducing dependence on non-native plants and synthetic pesticides. This approach promotes environmental sustainability while valuing local biodiversity and strengthening farmers' independence.



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