

TECHNICAL FACTSHEET

BASTOL

Bastol is a liquid biofertilizer and pesticide created through the controlled fermentation of organic materials, water, and microorganisms. It enhances the soil by providing essential nutrients, promoting biological activity, improving soil structure and aeration, and increasing soil's capacity to retain water.

This solution, which can be easily produced with local resources, is straightforward, affordable, and especially appropriate for smallholder farmers dealing with poor and/or degraded soils. The manufacturing process can be replicated at low cost, rendering it an accessible and inclusive technology.

Bastol integrates local resources to boost soil fertility and health by providing bioavailable nutrients and encouraging microbial activity. It serves as a cost-effective and eco-friendly solution, tailored to the conditions faced by smallholder farmers in West Africa, even in situations involving fragile or degraded soils.

This innovation fosters the independence of producers. It is also gender-sensitive, as its straightforward preparation and the feasibility of making small quantities promote the participation of women and youth, potentially creating micro-enterprise opportunities for production and marketing.

PHASE 1: TOOLS REQUIRED

The required tools include a mortar, a pestle, a scale, a can, and a knife.

The required ingredients include:

- Sugar, watermelon, dates, or sugarcane: Serves as a source of energy.
- Basil leaf: Serves as a fungicide and deters specific insects.
- Lemongrass foliage.
- Neem leaves.
- Papaya leaves: Utilized as a biopesticide.
- Cowpea flour, wheat flour, bambara groundnut flour, millet bran, or other cereals: Provides nourishment for microorganisms.

- Fresh cow manure: Facilitates moisture retention.
- Cow or small ruminant urine: Contains a high amount of nitrogen.
- Water.

PHASE 2: INGREDIENTS REQUIRED

- 1 kilogram (kg) of sugar, watermelon, or dates.
- 1 kg of basil leaves.
- 1 kg of lemongrass leaves.
- 1 kg of neem leaves.
- 1 kg of papaya leaves.
- 1 kg of cowpea flour, bambara groundnut flour, millet bran, or wheat flour.
- 1 kg of fresh cow manure
- 1 l of urine from cows or small ruminants, such as sheep or goats.
- 10 l of water.

PHASE 3: PREPARATION PROCESS FOR BASTOL

- Chop and grind the leaves individually.
- Combine the fresh dung with 1 liter of water.
- Combine the ingredients in a container, stirring each one in individually, and seal it securely.
- Stir the solution two times daily (morning and evening) for 5 minutes.
- At the conclusion of the 10th day, mix and strain the solution using an appropriate cloth.
- Transfer the product into a securely sealed container.
- Position the container in an area that is inaccessible to children and shielded from sunlight.



PHASE 4: APPLICATION OF THE BASTOL SOLUTION

Type of treatment	Quantity of Bastol (L)	Quantity of water (L)	Area
Worms, nematodes, and other pests	1	25	1 ha
Crop protection	1	75-100	1 ha
Weeds (herbicide)	1	10	400-500 m ²
Seeds	Soak in a small amount of the solution for 30 minutes.		
Seedlings/cuttings	1	10	Soak for 10-15 minutes.
Citrus fruits	2	100	Apply around the tree trunk.
Citrus leaves	1	50	
Fruit trees	Wintering: administer treatment monthly. / Dry season: administer treatment every 3 months.		
Market gardening	Apply treatment once every 15 -20 days.		

PHASE 5: SAFETY PROTOCOL

- Always wear gloves while preparing and using the product.
- Avoid acidic sources of sugar, such as oranges and lemons, during preparation.
- For optimal results, apply the solution following watering and/or after weeding.

Note: Bastol can be kept for up to 3 months when stored in a shaded area.

REFERENCES

Cascade training report for technical agents on Integrated Soil Fertility Management as part of the Soil Values program's field activities in Niger, June 2025

GUIDELINES FOR SUCCESSFUL EXECUTION

- Training and awareness initiatives: Provide practical training and community engagement programs to educate farmers about Bastol techniques and their advantages.
- Policies and incentives: Foster supportive policies and financial incentives to encourage the implementation of these local techniques.
- Technical support: Establish farmer groups (through WhatsApp), disseminate information through video and/or audio resources, promote awareness via community radio spots, and ensure consistent follow-up by extension agents to provide ongoing assistance.



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