

Formula 4 : Tobacco Leaf Solution

Against soft-bodied pests like aphids and mealybugs



Ingredients

- Tobacco leaves: 20 g
- Clean water: 2 L
- Dishwashing liquid (optional) : 0.5 teaspoon

Preparation Steps

- Boil 20 g of tobacco leaves in 2 L of water until it reaches 100°C, then let it cool.
- Strain the liquid through a thin white cloth to remove the leaves.
- Mix 300 ml of the tobacco solution with 100 ml of water.
- Add 0.5 teaspoon of dishwashing liquid to help the solution adhere to plant leaves.
- Spray the mixture daily for 7 consecutive days to eliminate pests.
- For prevention, spray every 7-15 days.



Advantages

- Cost-effective and easy-to-make
- Biodegradable natural pesticides
- Combination of insecticides and repellents
- Having a broad range of effects (fungi, bacteria, viruses, insects,...)

Materials

- 20 L bucket
- 20 L container or bucket with a lid
- 1 metallic bassine
- Strainer (cloth...)
- Knives
- Sprayer
- Pair of gloves

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Authors:

- **Mr. Xiangmonechan KUNYATAM**, Director of ADSA, <Xiangmonechan@gmail.com>
- **Mr. Kolaka BOUANEDAOHEUANG**, Director of Phan-Thin Social Enterprise, <kolaka.kb@gmail.com>

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ALiSEA Team

- Regional Coordinator: **Lucie Reynaud** <reynaud@gret.org>
- Laos National Secretary: **Soutima Boudvised** <soutima2506@gmail.com>

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Technical Leaflet NATURAL PESTICIDE RECIPES



Location of implementation
Sndin, Hongngoua, Phonemuag, Nakha and
Nanard Village, Nasaythong District,
Vientiane Capital, Lao PDR

Agroecological system:

Zone	Main activities	Climate	Rainfalls	Temperature
Plain	Rice/ Vegetable	Seasonally tropical (rainy season: June to October)	~ 1300 mm/year	Avg max: 35°C - Avg min: 14°C

Formula 1: Lemongrass, Galangal, Turmeric



Ingredients

- Galangal : 1 kg
- Turmeric : 1 kg
- Lemongrass : 1 kg

Preparation Steps

1. Finely chop or crush all the three ingredients
2. Mix 20L of clean water with the crushed mixture in a bucket or container. Stir well to ensure a proper mixture.
3. Let the mixture ferment overnight (12–24 hours).
4. Strain the liquid using a fine cloth or sieve to remove solid residues.
5. Dilute the concentrated solution with an equal amount of water (1:1 ratio).

Use

- Apply once every 7 days for prevention or more frequently for severe infestations.

Benefits

- Lemongrass contains citronella oil, which repels certain insects.
- Galangal has antibacterial properties and inhibits insect egg development.
- Repellent against pests, such as aphids, mealybugs, and thrips. Prevent from fungal diseases like powdery mildew and rust.

Formula 2 : Chili Mix



Ingredients

- Fresh red chili : 1 kg
- Fresh bird's eye chili : 1 kg
- Fresh green chili : 1 kg

Preparation Steps

1. Finely crush or blend fresh chili peppers. Wear gloves to avoid skin irritation from capsaicin.
2. Mix the crushed chilies with 20 L of clean water in a sealed container (e.g., bucket with lid).
3. Let it ferment for 3–5 days in a shaded, cool place
4. Stir daily and strain the liquid through a fine cloth or sieve to remove solid residues.
5. Dilute the concentrated solution with a concentration ratio between 0.2 L and 0.5 L of chili extract per 20 liters of water.

Adjustment: Use higher concentration (0.5 L) for severe infestations or lower (0.2 L) for mild prevention.

Frequency: Every 3–5 days for active infestations. Every 7–10 days for prevention.

Storage: Store unused extract in a cool, dark place for up to 1 month.

Benefits

- Chilies contain capsaicin, which kills insects and fungi.
- Local red chilies have pungent oils like piperine, which repel pests.
- Bird's eye chilies contain aromatic oils, which repel ants, aphids and whiteflies.
- This formula also helps to prevent viral diseases.
- Effectiveness: Works against aphids, whiteflies, and soft-bodied insects.

Formula 3 : Garlic and Water



Ingredients

- Garlic : 1.5 kg
- Water : 28 L

Preparation Steps

1. Finely crush or mince fresh garlic
2. Mix the crushed garlic with 20 liters of water in a clean container.
3. Let it ferment for 1–2 days
4. After fermentation, filter the liquid through a fine cloth or sieve to remove solid particles.

Use

- Mix the concentrated solution with 8 liters of clean water
- Reapply every 3–5 days or after rain for severe infestations.

Benefits

- Effective against fungal diseases and pests like aphids, whiteflies, thrips, and red spider mites.

Tips and advice

- Crushing materials into finer pieces may improve the extraction of active compounds.
- Fermentation helps break down plant materials, releasing natural pesticidal and fungicidal properties.
- Use formulas within a few days.
- The best time to spray is in the late afternoon to avoid sunburn on leaves and to allow overnight absorption.
- Spray evenly on pest-infested plants, covering both sides of the leaves and the stems.