



## Advantages

1. Cost-effective technique
2. No harmful to producers and consumers
3. Environmentally friendly
4. Efficiency-to-price ratio

## Recommendations

- Be carefully when using these recipes, you should wear facemask to protect dizziness because some formulars have a strong odor.
- You should follow the recommendation of harvesting vegetables according recipes
- The most ingredient you have, the correct method you follow is the most effective to your garden



### Authors:

- **Xorthor XAOCHA**, (PDDA) project manager  
<[icdienglish9@gmail.com](mailto:icdienglish9@gmail.com)>
- **Sodsuda Oudomsouk**, (POCA)  
<[osodsuda@yahoo.com](mailto:osodsuda@yahoo.com)>

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**Ms. Sodsuda Udomsouk** from the Organic Agriculture Cooperative of Paek District (POCA) has gathered a wealth of knowledge and practical formulas for producing natural pesticides and bio-fertilizers. This expertise comes from hands-on experience with leading farmers, support projects, and insights shared by international volunteers who have worked with POCA.

Her work has resulted in a comprehensive technical guide aimed at promoting sustainable agriculture and supporting dedicated, resilient farmers. By replacing chemical inputs with natural alternatives, she seeks to make farming safer for both producers and consumers while protecting the environment.

These natural methods are ideal for farmers: they are low-cost, health-conscious, and eco-friendly, offering a practical path toward sustainable agricultural practices.

[www.ali-sea.org](http://www.ali-sea.org)

### ALiSEA Team

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

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## Technical Leaflet TECHNIQUES FOR PRODUCING INSECT REPELLENTS 1/2



Sndin, Hongngoua, Phonemuag, Nakha and Nanard Villages, 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

## Insect protection formula (BE5)



### Ingredients

- Alcohol 50 percent - 2 glasses
- Vinegar 5% - 1 glass
- Brown sugar - 1 glass
- Bio-extracted water - 1 glass
- Dishwash liquid - 1 spoon

### Steps

1. Production: Mix the ingredients in a container and leave for about 24 hours before using. It should not be exposed to sunlight. It can be stored for up to 1 year.

### Using

- Use: Use Insect Repellent (BE5) using 2 spoons with 10 liters of water
- 10 liters of water sprayed in 20 m<sup>2</sup> (depending on the type of sprayer used)
- Use to spray all types of insects that damage vegetables and trees. Apply for 3 consecutive days, once a day. In the case of insect repellency, we should apply once a week, preferably in the evening when there is no direct sunlight. And you should pay attention to insect damage. If insects damage at night, clean them in the evening, and if insects damage during the day, clean them in the morning.

## Protection against the flea beetle



### Ingredients

- Garlic : 1g
- Latana flower 'Doksamsi' : 1g
- Galangal : 1g
- Tinospora 'Khueankhaoho' : 5g
- Ginger : 1g
- French marigold 'Dokdaoheuang' : 2g
- Thai peaches : 1g
- Tap water : 2 L
- Chili : 5g
- Climbing wattle 'Nyoom leaves' : 1g

### Steps

- Crush and finely chop all the herbs, mix well, add water, if the 2 liters of water is not enough (if the water is not covering all the ingredients), you can add more, cover the herbs and leave to ferment for 24 hours before using.

### Using

1. Mix 1 liter of herbal water with 10 liters of tap or fresh water (transparent water) and apply it in the evening for 2-3 consecutive days until the flea beetles are no longer visible.
2. Should not be kept for more than 2-3 days, it will expire. It should be made and used immediately.

## General pest control



### Ingredients

- Hak leaves (*Calotropis gigantea*)
  - Champa leaves 'Dok Champa'
  - Papaya leaves
  - Latana flower 'Doksamsi'
  - Kadao leaves or seeds (*Azadirachta indica*)
  - *Chromolaena odorata*
  - Tinospora 'Kheua khaoho'
  - Betel pepper leaves
- => The total mix of leaves must weight 1 kg

- 1 handful of fresh cow dung
- 10 liters of clean water
- A water tank of 13 liters or more

### Steps

- Cut all the ingredients into small pieces, weigh them to make 1 kilogram (if there are less than 5 ingredients, you can still make it), pour them into the prepared container, add rice and cow dung, mix them together, and let them ferment for 5 days. Stir once a day during the fermentation step.

### Using

1. Mix 1 liter of herbal water with 3 liters of water. If there are many insects, use for 3 consecutive days once a day. If for prevention, use once a week.
2. Can be stored for 2 days at the end of the fermentation step (if you water more than 1 week, the vegetables will die).