

**MicrobeBio®**



**NAPA CABBAGE  
(REPOLLO CHINO /  
CHINESE CABBAGE)  
RECOMMENDATIONS  
FOR DOMINICAN  
FARMERS**

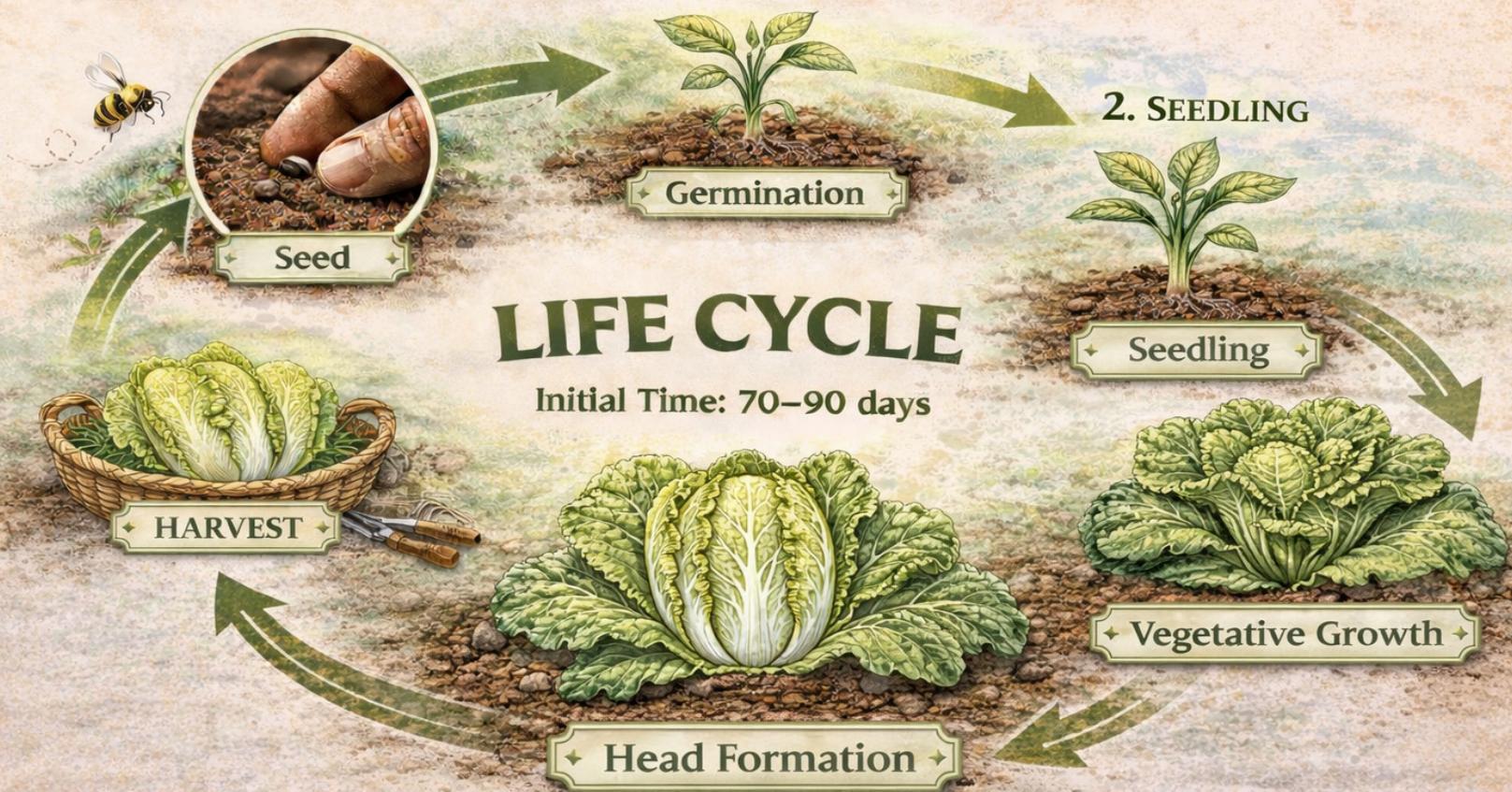




# APPLICATION

# LIFE CYCLE OF NAPA CABBAGE

Repollo Chino / Chinese Cabbage



# Application rate - per hectare

## NAPA CABBAGE

	PRE-PLANTING / SOIL PREPARATION STAGE	SOAK SEEDS	SEEDLING STAGE	VEGETATIVE / EARLY GROWTH STAGE	HEADING / MID-GROWTH STAGE	MATURITY / PRE-HARVEST STAGE	HARVEST
	DAY -30	DAY -7	DAY 0	DAY 21	DAY 42	DAY 56	DAY 80
<b>ORGANIC SOIL ENHANCEMENT</b>	<b>* NATURE VIGOR</b>	-	-	5 KG	5 KG	5 KG	-
	<b>* HYDRO ACTIVATOR</b>	-	-	8 L	8 L	8 L	-
	<b>*AQUA ACTIVATOR GRW</b>	500 G	500 G	500 G	500 G	500 G	-
	<b>**RHIZO ACTIVATOR</b>	100 KG	-	-	-	50 KG	-
<b>BIORATIONAL</b>	<b>*AQUA ACTIVATOR X1™ (NEMATO)</b>	-	500 G	500 G	500 G	500 G	300 G
	<b>*AQUA ACTIVATOR X3™ (PEST)</b>	-	500 G	500 G	500 G	500 G	300 G
	<b>*AQUA ACTIVATOR X5™ (FUNGUS)</b>	-	500 G	500 G	500 G	500 G	300 G
	<b>*AQUA ACTIVATOR X8™ (SNAIL)</b>	-	-	-	-	-	-
	<b>*AQUA ACTIVATOR X11™ (COMPOSE)</b>	-	-	-	-	-	-
	<b>*GREEN FURY (PEST)</b>	<i>Plant disease outbreak (pest): agitate 500 ml Green Fury™ into at least 400 liters of non-chlorine water to treat 1 hectare.</i>					
<b>*NATURE VENOM (FUNGUS)</b>	<i>Plant disease outbreak (fungus and virus): agitate 500 ml Nature Venom™ into at least 400 liters of non-chlorine water to treat 1 hectare.</i>						



**Soaking  
Napa Cabbage  
seeds**

Soaking napa cabbage seeds (whether bell peppers, chili peppers, or hot varieties) before planting is a common optional step among farmers. It can help soften the seed coat, potentially speed up germination slightly, reduce the risk of mold or pathogens (especially with additives like hydrogen peroxide), and solution A, and sometimes improve overall success rates—though results vary by variety, seed age, and conditions.

Napa cabbage seeds often take 7–21+ days (or longer for some hot types) to germinate even under ideal warm conditions (80–90°F/27–32°C soil temperature with consistent moisture), so soaking is more of a helpful boost than a necessity.

## RECOMMENDED SOAKING TIMES

Opinions differ based on experiments and grower experiences, but here's a breakdown of the most common and evidence-based approaches:

- Short soak (most popular and low-risk): 8–24 hours in room-temperature water (or lukewarm/warm water around 80–100°F/27–38°C for better results).

- Many sources (including grower tests and guides) recommend overnight (8–12 hours) or up to 24 hours to soften the coat without risking rot.

- Some use plain water, while others add a mild solution like weak chamomile tea (anti-fungal), diluted hydrogen peroxide (3% for 10–30 minutes to disinfect, then plain water), or even potassium nitrate (saltpeter) for stubborn varieties.

- Very short/quick soak: 10–60 minutes (or up to a few hours).

- Often for disinfection only (e.g., hydrogen peroxide mix) or if using chamomile tea to break down inhibitors. This is sufficient for many and avoids over-soaking issues.

- Longer soak: 24–48 hours (sometimes in chamomile tea or distilled water).

- Suggested by some for slower-germinating hot peppers (e.g., to mimic natural weathering or fully hydrate). One method soaks for 48 hours before paper-towel germination. However, longer than 24–36 hours can increase mold risk if not monitored.



## TIPS FOR BEST RESULTS

- Use room-temperature or slightly warm water (not hot/boiling, as it can damage seeds).
- Place seeds in a shallow bowl or jar—change the water if soaking longer than 12 hours to prevent bacterial growth.
- After soaking, plant immediately in moist seed-starting mix (¼-inch deep), or pre-sprout in a damp paper towel inside a bag for faster visible sprouting.
- Viability test: Floating seeds may be duds (discard or test them anyway), but sinking ones are usually good.
- Key for success: Heat mat for bottom warmth (80–85°F+), high humidity, and patience—don't give up early!
- Some controlled experiments show soaking doesn't always dramatically improve rates or speed compared to dry planting, especially for fresh seeds, but it rarely hurts if done properly.

If you're dealing with a specific variety (e.g., superhots like ghost peppers or rocotos, which can be stubborn), soaking longer (24+ hours) might help more. For standard bell or mild chilies, 12–24 hours is plenty.

Start with 12–24 hours in plain warm solutions A—many farmers swear by it for quicker, more uniform sprouts!





# Diseases & Pests



## PESTS, FUNGI, VIRUSES, AND DISEASES BY GROWTH STAGE

Napa cabbage is susceptible to various pests, fungal, viral, and bacterial diseases that can reduce yield if not managed properly. Below are the major threats by growth stage, with symptoms and Microbebio-based control measures, supplemented by organic practices.

### SEED STAGE

1	<b>Pests</b>	<ul style="list-style-type: none"> <li>Seed corn maggot (<i>Delia platura</i>) – larvae feed on seeds underground; seeds disappear or become hollow</li> </ul>	Microbebio Aqua Activator X3
2	<b>Fungal Diseases</b>	<ul style="list-style-type: none"> <li><i>Pythium</i> spp., <i>Rhizoctonia solani</i>, <i>Fusarium</i> spp. – seed rot, seeds soften and decay in soil before germination</li> </ul>	Microbebio Aqua Activator X5
3	<b>Nematode</b>	<ul style="list-style-type: none"> <li>Usually no visible symptoms yet because roots have not developed</li> </ul>	Microbebio Aqua Activator X1
4	<b>Virus</b>	<ul style="list-style-type: none"> <li>Rare at seed stage</li> </ul>	Microbebio Aqua Activator X5

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*Plant disease outbreak (fungus and virus): agitate 500 ml Nature Venom™ into at least 400 liters of non-chlorine water to treat 1 hectare.*



## GERMINATION STAGE

1	<b>Pests</b>	<ul style="list-style-type: none"> <li>Flea beetles – tiny round holes on cotyledons; Cutworms – seedlings cut at soil line overnight</li> </ul>	Microbebio Aqua Activator X3
2	<b>Fungal Diseases</b>	<ul style="list-style-type: none"> <li>Damping-off – stem becomes thin and soft at soil line, seedlings collapse and fall over</li> </ul>	Microbebio Aqua Activator X5
3	<b>Virus</b>	<ul style="list-style-type: none"> <li>Rare</li> </ul>	Microbebio Aqua Activator X5
4	<b>Nematodes</b>	<ul style="list-style-type: none"> <li>Root-knot nematodes (<i>Meloidogyne</i> spp.) – early root swelling, seedlings grow slowly</li> </ul>	Microbebio Aqua Activator X1

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## SEEDLING STAGE

1	<b>Pests</b>	<ul style="list-style-type: none"> <li>Aphids – clusters on young leaves causing curling; Diamondback moth larvae – small irregular chewing holes</li> </ul>	Microbebio Aqua Activator X3
2	<b>Fungal Diseases</b>	<ul style="list-style-type: none"> <li>Black rot (<i>Xanthomonas campestris</i>) – V-shaped yellow lesions on leaf edges with black veins; Alternaria leaf blight – dark necrotic leaf spots</li> </ul>	Microbebio Aqua Activator X5
3	<b>Virus</b>	<ul style="list-style-type: none"> <li>Turnip mosaic virus, Cauliflower mosaic virus – mosaic yellow patterns, leaf deformation and stunted growth</li> </ul>	Microbebio Aqua Activator X5
4	<b>Nematodes</b>	<ul style="list-style-type: none"> <li>Root-knot nematodes – larger root galls, plants grow slowly and show nutrient deficiency symptoms</li> </ul>	Microbebio Aqua Activator X1

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## VEGETATIVE GROWTH STAGE

1	<b>Pests</b>	<ul style="list-style-type: none"><li>• Cabbage worms</li><li>• Diamondback moth</li><li>• Flea beetles – heavy leaf feeding</li></ul>	Microbebio Aqua Activator X3
2	<b>Fungal Diseases</b>	<ul style="list-style-type: none"><li>• Black rot (<i>Xanthomonas campestris</i>) – V-shaped lesions</li><li>• Alternaria leaf blight</li></ul>	Microbebio Aqua Activator X5
3	<b>Virus</b>	<ul style="list-style-type: none"><li>• Turnip mosaic virus</li><li>• Cauliflower mosaic virus – mosaic patterns and leaf deformation</li></ul>	Microbebio Aqua Activator X5
4	<b>Nematodes</b>	<ul style="list-style-type: none"><li>• Root-knot nematodes – yellowing and poor growth</li></ul>	Microbebio Aqua Activator X1

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## HEAD FORMATION STAGE

1	<b>Pests</b>	<ul style="list-style-type: none"> <li>Cabbage looper larvae feeding inside head; Aphids hiding between leaves and contaminating cabbage</li> </ul>	Microbebio Aqua Activator X3
2	<b>Fungal Diseases</b>	<ul style="list-style-type: none"> <li>Soft rot (<i>Erwinia</i> spp.) – watery rot with foul smell; Sclerotinia white mold – white fungal growth and tissue collapse</li> </ul>	Microbebio Aqua Activator X5
3	<b>Virus</b>	<ul style="list-style-type: none"> <li>Turnip mosaic virus – cabbage heads uneven, reduced market quality</li> </ul>	Microbebio Aqua Activator X5
4	<b>Nematoes</b>	<ul style="list-style-type: none"> <li>Root damage reduces yield and plant vigor</li> </ul>	Microbebio Aqua Activator X1

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## HARVEST STAGE

1	<b>Pests</b>	<ul style="list-style-type: none"><li>• Aphids and cabbage worms inside cabbage head causing contamination and feeding damage</li></ul>	Microbebio Aqua Activator X3
2	<b>Fungal Diseases</b>	<ul style="list-style-type: none"><li>• Soft rot (<i>Erwinia</i> spp.) – watery rot with foul smell; Sclerotinia white mold – white fungal growth and tissue collapse</li></ul>	Microbebio Aqua Activator X5
3	<b>Virus</b>	<ul style="list-style-type: none"><li>• Turnip mosaic virus – cabbage heads uneven, reduced market quality</li></ul>	Microbebio Aqua Activator X5
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