

POWDERY MILDEW FIX — CHEAT SHEET

Indian Container Gardens • Day 12 of the 30-Day Summer Gardening Challenge

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⚠ THE MOST IMPORTANT FACT ABOUT POWDERY MILDEW IN INDIA

IT PEAKS IN DRY HEAT, NOT MONSOON

Spore germination optimal: 40–70% humidity, 20–30°C. Indian April terrace: 30–50% humidity — near-perfect germination.

Humidity above 80% (monsoon) SUPPRESSES it — water causes spores to burst.

MANCOZEB DOES NOT WORK

Mancozeb, Bordeaux mixture, Metalaxyl — zero activity against powdery mildew. These work for downy mildew and Pythium only.

Correct product: baking soda spray (pH change) or milk spray (UV antifungal).

★ THE OVERNIGHT-DEW INCUBATION CYCLE (WHY APRIL IS PEAK SEASON)

Evening dew forms on leaf surfaces → powdery mildew spores germinate overnight in moist warmth → colony establishes before morning → afternoon sun accelerates spread. This daily cycle repeats every night in April and May. The monsoon breaks it by keeping humidity above 80% continuously.

🌿 THE 5-SECOND SPECIES IDENTIFICATION — TURN THE LEAF OVER

This one check determines your entire treatment. Takes 5 seconds. Never skip it.

UPPER: White powder
UNDERSIDE: Clean & green

Standard Powdery Mildew

Podosphaera xanthii

Cucumber, gourd varieties

✓ BAKING SODA SPRAY

UPPER: Yellow patches
UNDERSIDE: White powder

Leveillula taurica

Capsicum only

(reverse pattern)

✓ WETTABLE SULPHUR

UPPER: Yellow patches
UNDERSIDE: Grey-purple fuzz

Downy Mildew

Different disease entirely

(*Pseudoperonospora*)

✓ COPPER OXYCHLORIDE
or MANCOZEB

5g + 2ml soap per litre
Evening, every 3 days

₹50–80 per 100g
Agricultural supply shops

₹60–100 per 100g
Agricultural supply shops

X NEVER USE Mancozeb for powdery mildew (clean underside). Zero activity. Three weeks wasted.
X NEVER USE baking soda for downy mildew (grey–purple underside). Wrong treatment entirely.

MASTER DIAGNOSIS TABLE — WHITE POWDER AND SIMILAR PROBLEMS

What You See	Underside	Insects?	Most Likely	First Step
White powder, circular patches, upper leaf	Clean	No	Powdery mildew	Baking soda spray — tonight
White powder covering multiple leaves	Clean	No	PM advanced	Remove 60%+ leaves, baking soda + neem combined
Yellow patches upper, grey–purple fuzz under	Grey–purple fuzz	No	Downy mildew	Copper oxychloride or Mancozeb
White powder underside + yellow top (capsicum)	White fuzz	No	Leveillula taurica	Wettable sulphur spray
White coating, hard/crusty texture on soil	Clean — soil not leaves	No	Salt deposit (Day 4)	Flush soil — not fungal
White powder + clustered insects on tips	Powder + insects	Yes	PM + aphids together	Treat aphids first (Day 11), then PM

CITY-BY-CITY APRIL–MAY POWDERY MILDEW RISK

City	Apr–May Humidity	PM Risk	Prevention Start
Bangalore	40–55%	Moderate–High	April 1 milk spray
Mumbai	55–70%	Moderate	April 1 milk spray
Hyderabad	25–40%	Very High	March 15 milk spray

City	Apr–May Humidity	PM Risk	Prevention Start
Chennai	45–60%	High	April 1 milk spray
Madanapalle	28–45%	Very High	March 15 milk spray
Delhi	20–35%	EXTREME	March 1 milk spray
Ahmedabad	18–30%	EXTREME	March 1 milk spray

POWDERY MILDEW FIX — PAGE 2: TREATMENT PROTOCOLS

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Baking Soda Spray • Milk Spray • Spacing • Shade Cloth Fix • Sunita Benchmark

BAKING SODA SPRAY — PRIMARY TREATMENT — ₹20-40 GROCERY STORE

RECIPE:

Baking soda	5g per litre (1 flat tsp)	₹20-40/100g
Dish soap	2ml per litre	₹10-20
Plain water	1 litre total	₹0

1. Dissolve 5g baking soda in 100ml water first — stir until completely clear
2. Add 2ml dish soap, stir gently
3. Add remaining water to 1 litre total
4. Remove leaves with >60% white coverage before spraying
5. Apply ALL leaf surfaces — upper AND lower — affected and nearby plants
6. EVENING ONLY (after 5 PM) — midday application = leaf burn risk
7. Repeat every 3 days × first 10 days, then every 7 days preventive

HOW IT WORKS:

Changes leaf surface pH from neutral to alkaline. Powdery mildew conidia cannot germinate in alkaline conditions. Established colonies desiccate and die.

WHAT TO EXPECT:

Day 3-
4 Existing patches turn brown and dry — colony dying

Day 5-
7 Browning complete, no new patches on sprayed leaves

Day 7-
10 New growth emerging completely clean

X DO NOT EXCEED 5g per litre — phytotoxicity on vegetable crops above this level
X NEVER apply at midday — baking soda concentrate in hot sun burns leaves
X Do NOT use for *Leveillula taurica* (white underside on capsicum) — use sulphur

MILK SPRAY — UV ANTIFUNGAL PREVENTION — ₹25 OR FREE

HOW IT WORKS:

SUNITA — HYDERABAD BENCHMARK

6 CAPSICUMS, 5TH FLOOR SOUTH TERRACE

Three weeks of wrong products — no improvement:

UV light activates proteins in full-fat milk to produce antifungal compounds that disrupt powdery mildew spore cell membranes. UV-dependent — MORNING ONLY.

RECIPE:

Full-fat milk	300ml	₹15–25
Plain water	700ml	₹0

NO SOAP — soap denatures proteins before UV activation

1. Mix 300ml full-fat milk + 700ml water
2. Apply to all plant surfaces MORNING ONLY (7–10 AM)
3. Allow to dry naturally — slight white film is normal
4. Every 7 days preventive from April 1st

ALTERNATING SCHEDULE:

Baking soda: Day 0 (evening) → Day 3 (evening) → Day 7 (evening)

Milk spray: Day 4 (morning) → Day 11 (morning)

Two mechanisms, no adaptation. Better than either alone.

Reduced average detection coverage from 22% (2022) to 5% (2023–24) with milk spray from April 1st.

- X Bordeaux mixture — for bacterial disease
- X Mancozeb — for downy mildew
- X Neem oil at 10ml/L — leaf burn, no PM control

PRIYA'S QUESTION:

"Turn one affected leaf over. What does the underside look like?"

"Clean and green. Normal."

Standard PM. Wrong product for 3 weeks.

Baking soda spray started.

RESULTS:

Day 5: patches browning and drying ✓

Day 10: all 6 plants resolved ✓

New growth completely clean ✓

"Three weeks of wrong product versus ten days of the right one. I wish I had known which side of the leaf to check."

🌿 POT SPACING DATA — 20CM MINIMUM CHANGES EVERYTHING

PRIYA'S 2023 DATA (same garden, same season):

Spacing	% Coverage at Detection	Days to Resolve

⚠️ SHADE CLOTH CREATES PM RISK — ONE FREE FIX

THE PROBLEM:

Fixed shade cloth canopy reduces air movement by 40–60% under cloth. Spores concentrate instead of

8cm (methi)	35%	16 days
12cm (cucumber)	18%	18 days
20cm (capsicum)	3–5%	12–14 days
25cm (cucumber)	4%	10 days

20cm gap = spores disperse rather than concentrating against adjacent leaf surfaces. Free structural prevention. Move pots before next spray.

dispersing. Slightly higher humidity under cloth. Reduced UV that would otherwise inhibit spore germination.

THE FREE FIX:

Rig one edge of shade cloth to lift. Raise for 1–2 hours mid-afternoon (2–4 PM) when terrace wind peaks. Close again before evening temperature drop.

⚠ NEVER DO:

Overhead/sprinkler watering in the evening on PM-prone plants. Rewets leaf surfaces overnight → extends the dew-germination window → more spore establishment each night.

ALWAYS DO:

Base watering or drip only for capsicum and cucumber in April–June. Keeps soil moist, leaves dry.

POWDERY MILDEW FIX — PAGE 3: PREVENT + MONITOR

Prevention Calendar • Recovery Timeline • Products • 23-Item Sunday Check

PREVENTION CALENDAR — START BEFORE WHITE POWDER APPEARS

Period	Spray Action	Inspection	Key Priority
FEB– MAR Prepare	No spray needed unless symptoms appear. Adjust all cucurbit and capsicum pots to 20cm minimum spacing.	Weekly upper leaf surface check. Form the habit before urgency.	Structural fix: spacing. Check shade cloth ventilation.
APRIL ★ Preventive	Milk spray every 7 days from April 1st on all capsicum, cucumber, gourd, tomato — regardless of symptoms.	Inspect upper leaf surfaces every 2–3 days. Target: catch first white patch at <5% coverage.	Any white patch detected → baking soda spray that evening.
MAY ★★ Active	Milk spray every 7 days + baking soda every 3 days at first detection. Alternate the two sprays.	Every 2 days full inspection. Any new spread = increase pot spacing or add windbreak between sections.	Raise shade cloth edge 1–2 hrs mid-afternoon daily. Base watering only — no leaf wetting.
JUNE Monsoon	PM pressure drops as humidity rises above 70%. Reduce baking soda to 7-day preventive. Stop milk spray when humidity consistently above 70%.	Continue weekly inspections but now check UNDERSIDE specifically for grey-purple fuzz of downy mildew (monsoon disease).	Transition from PM prevention to downy mildew monitoring. Different disease, different treatment.

By the time white powder covers 20%+ of leaves, the fungus has been releasing spores for 7–10 days — adjacent plants already infected.

RECOVERY TIMELINE AFTER BAKING SODA PROTOCOL

SUNDAY CHECK — 23 ITEMS (UNDER 27 MIN)

⚠ FINGER TEST D1 — 2 inches soil depth?

⚠ SMELL TEST D1 — root inspection?

⚠ LEAF COLOUR D2 — tops + bottoms

Twenty-three checks. Under twenty-seven minutes.
Once a week.

PRODUCTS I HAVE ACTUALLY USED IN INDIA

Product	Use	Cost	Where
Baking soda (100g)	Primary PM spray	₹20–40	Any grocery
Full-fat milk (500ml)	Prevention spray	₹25–40	Any dairy
Wettable sulphur (100g)	Leveillula on capsicum	₹50–80	Agri shop
Copper oxychloride	Downy mildew only	₹60–100	Agri shop
Neem oil (500ml)	Combined with baking soda	₹150–250	Amazon, agri
Fine-mist spray bottle (1L)	Uniform coverage	₹80–150	Hardware
Digital hygrometer	Humidity monitoring	₹300–500	Amazon India
Dish soap	Baking soda surfactant	₹10–20	Any grocery

THE RULE THAT ENDS THE WRONG PRODUCT CYCLE

①	②	③
TURN LEAF OVER	BAKING SODA SPRAY	MILK SPRAY WEEKLY
5 seconds. Determines entire treatment pathway.	5g per litre, evening, every 3 days × 10 days.	300ml milk + 700ml water, mornings, from April 1st.

Turn the leaf over first. Then mix the baking soda.