Life works in community.

An introduction to Beneficial Microorganisms (BM)

In a living system, microorganisms do not exist in isolation. They interact, compete, collaborate and transform their surroundings. La Selva en Botella® grows from this principle.

La Selva en Botella® is a concentrated liquid solution of local, organic origin, made with water, molasses and a consortium of beneficial microorganisms. Lactic acid bacteria, photosynthetic bacteria, yeasts and beneficial fungi coexist as a community and take part in natural processes of transformation, maintenance and regeneration.

Its potential lies in the community and in how it is introduced into each environment. Water, soil, plants, organic matter, surfaces and sargassum share the same biological principle. What changes is the dose, dilution, frequency and application method.

One microbial community. Different systems.

Each environment responds differently. Working with Beneficial Microorganisms also means observing the system, respecting its conditions and understanding that application is part of a living process.

The question is not only which microorganisms it contains, but what they can do together.

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Beneficial Microorganisms (BM)

One microbial community. Different systems.

01 WHAT ARE THEY?

A concentrated liquid solution of organic, locally sourced origin, formed by a symbiotic microbial consortium that brings microbial activity into natural processes of transformation, maintenance and regeneration.

Water + molasses + consortium of beneficial microorganisms

02 CONSORTIUM COMPOSITION

Lactic acid bacteria

Participate in fermentation and the transformation of organic matter.

Photosynthetic bacteria

Participate in natural cycles that transform organic compounds.

Yeasts

Produce metabolites that other microorganisms in the consortium can use.

Beneficial fungi

Support the transformation and decomposition of organic matter.

03 FUNDAMENTAL PRINCIPLE

The same microbial consortium is applied to different systems.

What changes is dose, dilution, frequency, application method and system conditions.

04 WHY DOES IT WORK ACROSS DIFFERENT SYSTEMS?

The biological principle is the same; each system requires its own application protocol.



05 APPLICATION PRINCIPLE

Reference dose | Dilution | Frequency | Application method | System response

Reference dose. Each system is adjusted according to its conditions and response.

Protect the culture
Chlorine, sanitizers, oxidizing agents, excessive heat and UV radiation reduce microbial viability.

One biological tool, multiple application systems.

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Human Use

Beneficial Microorganisms to support your natural processes.

01 REFERENCE DOSE

20 ml / glass of water

20 ml

Empty stomach

With vitamins, supplements or complementary products.

02 FREQUENCY

Once daily on an empty stomach; 20 ml may be repeated with each intake of vitamins, supplements or complementary products.

03 APPLICATION METHOD

1. Serve a glass of water.
2. Add 20 ml of product and mix.
3. Take once daily on an empty stomach as the base use.

   Supports microbial balance associated with normal digestive and urinary processes, and supports normal digestion and nutrient absorption.
4. When used with vitamins, supplements or complementary products, take alongside them; the dose may be repeated with each intake during the same day.

   Accompanies supplement intake and supports the body's natural processing and elimination mechanisms.

04 COMPATIBILITY / PRECAUTIONS

No specific incompatibilities have been identified within the usual-use protocol.

05 HOW TO TELL IT'S WORKING

Improved digestive regularity, more consistent bowel movements, greater perceived energy and less feeling tired.

Reference dose. It may be adjusted slightly based on environmental conditions and system response.

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Animals & Pets

Microbial care from the inside out.

01 REFERENCE DOSE



WATER
10 ml / 1 L

FOOD
10 ml / 100 g

TOPICAL
30 ml / 1 L

02 FREQUENCY

Water and food: daily.
Topical application: after bathing and when odor or skin/coat concerns are present.

03 APPLICATION METHOD

1



Choose the application route.

2

WATER: add 10 ml per 1 L of regular drinking water.

Supports microbial diversity associated with normal urinary processes and natural mineral handling.

3

FOOD: add 10 ml per 100 g of food.

Supports normal digestion and nutrient absorption.

4

TOPICAL: dilute 30 ml/L, spray over skin and coat and allow to air-dry.

Supports microbial balance of skin and coat and may help limit conditions associated with fungal overgrowth and unpleasant odor.

04 COMPATIBILITY / PRECAUTIONS

No specific incompatibilities have been identified within the usual-use protocol.

05 HOW TO TELL IT'S WORKING

Observe a good digestive response and, for topical use, less unpleasant odor and fewer recurring skin/coat concerns.

Reference dose. It may be adjusted slightly based on environmental conditions and system response.

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Plants in Water

Healthy roots in a stable water system.

01 REFERENCE DOSE

50 ml / 1 L



500 ml water top-up = **25 ml** product | 250 ml water top-up = **12.5 ml** product

02 FREQUENCY

When preparing the system and with every water top-up; add product in the same proportion.

03 APPLICATION METHOD

1



Place the plant with its roots directly in water.

2



Add 50 ml of product per 1 L of water.

3



While the system remains stable, do not perform routine full water changes.

4



When topping up water lost to evaporation, add product in the same 50 ml/L proportion.

04 COMPATIBILITY / PRECAUTIONS

Compatible with liquid fertilizers and nutrients used for water-grown plants.

05 HOW TO TELL IT'S WORKING

Stable water with less unpleasant odor or mold, healthy roots, greater vitality in leaves/stems and faster growth.

Reference dose. It may be adjusted slightly based on environmental conditions and system response.

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Fruits & Vegetables

Cleaning frults and vegetables.

01 REFERENCE DOSE

20 ml / 1 L

02 FREQUENCY

Single application.

03 APPLICATION METHOD

1. **Prepare the dilution:** 20 ml of product per 1 L of water.
2. **Fully immerse fruits and vegetables.**
3. 

Leave for 3 to 5 minutes.
4. 
Remove and drain; do not rinse.

04 COMPATIBILITY / PRECAUTIONS

Do not mix with other products intended for the same purpose.

05 HOW TO TELL IT'S WORKING

Fruits and vegetables ţake longer to show signs of decomposition.

Reference dose. It may be adjusted slightly based on environmental conditions and system response.

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Floors & General Cleaning

Same cleaning performance with less cleaning product.

01 REFERENCE DOSE



10 ml / 1 L

02 FREQUENCY

With every mopping.

03 APPLICATION METHOD

1. Prepare the cleaning water.
2. Add 10 ml of Beneficial Microorganisms (BM) per 1 L of water.
3. Use approximately 50% of the usual detergent.
4. Mop as usual.

04 COMPATIBILITY / PRECAUTIONS

Compatible with cleaners; works best with naturally derived, environmentally friendly options. Strong sanitizers or oxidizing agents may reduce microbial activity.

05 HOW TO TELL IT'S WORKING

Comparable cleaning results with lower cleaner use and delayed reappearance of mold and odors.

Reference dose. It may be adjusted slightly based on environmental conditions and system response.

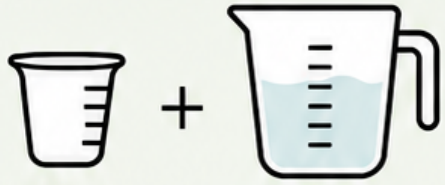
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Bathrooms & Showers

Clean and help maintain your bathroom.

01 REFERENCE DOSE

33 ml / 1 L



02 FREQUENCY

After each cleaning; may be reinforced between uses.

03 APPLICATION METHOD

1



Complete the usual cleaning first.

2



Dilute 33 ml of product per 1 L of water.

3



Transfer to a spray bottle.

4



Spray grout lines, floors, toilet, drains, sink and damp areas; allow to air-dry.

04 COMPATIBILITY / PRECAUTIONS

Avoid strong disinfectants or oxidizing sprays after application.

05 HOW TO TELL IT'S WORKING

Mold and unpleasant odors appear more slowly in damp areas.

Reference dose. It may be adjusted slightly based on environmental conditions and system response.

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Grease Traps

Microbial maintenance for grease and unpleasant odors.

01 REFERENCE DOSE

POST-CLEANING
100 ml / 1 L

MAINTENANCE
50 ml daily

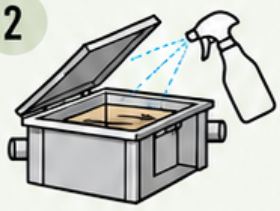
02 FREQUENCY

Spray after every emptying and cleaning; 50 ml daily at the end of operations.

03 APPLICATION METHOD

Support reduction of grease buildup, unpleasant odors, clogs and frequency of deep cleaning.

1. 
Empty and physically clean the grease trap.

2. 
Prepare 100 ml/L and spray internal surfaces after cleaning.

3. 
At the end of operations, when flow is lower, pour 50 ml directly into the drain leading to the trap.

4. 
Continue periodic physical removal of solids and grease; microbial treatment supports physical cleaning and does not replace it.

04 COMPATIBILITY / PRECAUTIONS

Do not combine with muriatic acid, chlorine or isopropyl alcohol during treatment.

05 HOW TO TELL IT'S WORKING

Strong reduction in unpleasant odors and, with continuous maintenance, less buildup and longer intervals between deep cleanings.

Reference dose. It may be adjusted slightly based on environmental conditions and system response.

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Crop & Garden Irrigation

Beneficial Microorganisms for plants and soil.

01 REFERENCE DOSE

INITIAL TREATMENT	MAINTENANCE
1:50	1:100
≈20 ml/L	≈10 ml/L

02 FREQUENCY

According to system severity and normal irrigation frequency.

03 APPLICATION METHOD

1



Add the product directly to irrigation water.

2



Initial treatment: 1 part product to 50 parts water (≈20 ml/L).

3



As the system improves, gradually reduce concentration.

4



Maintenance: 1 part product to 100 parts water (≈10 ml/L).

04 COMPATIBILITY / PRECAUTIONS

Compatible with organic agriculture practices and products; avoid biocides that reduce the microbial consortium.

05 HOW TO TELL IT'S WORKING

Observe plant vigor, firmness and greater stability in the garden or cultivation ecosystem.

Reference dose. It may be adjusted slightly based on environmental conditions and system response.

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Soil Improvement

Bring biological activity back to your soil.

01 REFERENCE DOSE

30 ml / 1 L

02 FREQUENCY

High-damage soil: daily for 1 week → every 3 days for 2 weeks → weekly as it improves.

Maintenance: approximately monthly and during fertilization.

03 APPLICATION METHOD

1. 
Water the soil normally first to moisten it.

2. 
Prepare 30 ml of product per 1 L of water and apply a second light watering.

3. 
Reduce application frequency progressively as the soil improves.

4. 
Once stabilized, apply monthly and before/during fertilization.

May be combined with fertilization, preferably natural inputs such as humus and vermicompost, to support nutrient availability and uptake.

04 COMPATIBILITY / PRECAUTIONS

Compatible with organic agriculture practices and products; avoid biocides that reduce the microbial community.

05 HOW TO TELL IT'S WORKING

Less plant stress and greater observable biodiversity in the soil-plant system.

Reference dose. It may be adjusted slightly based on environmental conditions and system response.

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Water Tanks (Tinacos)

Microbial maintenance for your water system.

01 REFERENCE DOSE

1 L / 2,000 L

Actual water volume (L) ÷ 2,000 = Liters of product

02 FREQUENCY

Reference: approximately once per month; adjust according to use and recurrence of the issue.

03 APPLICATION METHOD

1. Start with a clean water tank.
2. Calculate the dose using the actual volume of water present.
3. Pour the product directly into the water.
4. Observe how long mold and deposits take to return and adjust frequency accordingly.

04 COMPATIBILITY / PRECAUTIONS

Chlorination reduces microbial viability; consider chlorination and Beneficial Microorganisms (BM) as separate or sequential processes.

05 HOW TO TELL IT'S WORKING

The system stays cleaner for longer, with less visible mold and mineral buildup at outlets and showers.

Reference dose. It may be adjusted slightly based on environmental conditions and system response.

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Cisterns

Cleaner for longer, with less maintenance.

01 REFERENCE DOSE

1 L / 4,000 L

Actual water volume (L) ÷ 4,000 = Liters of product

02 FREQUENCY

Reference: every 3 months; adapt according to water renewal and recurrence of the issue.

Month 1 · Month 2 · Month 3

03 APPLICATION METHOD

1. Start with a clean cistern.
2. Calculate the dose using the actual water volume.
3. Pour directly once filled or when the working volume is complete.
4. Track how long mold takes to reappear and adjust maintenance accordingly.

04 COMPATIBILITY / PRECAUTIONS

Low compatibility with simultaneous chlorination because chlorination reduces microbial viability.

05 HOW TO TELL IT'S WORKING

Longer intervals between cleanings, with less mold and mineral buildup.

Reference dose. It may be adjusted slightly based on environmental conditions and system response.

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Composting / Bokashi

Reduce processing time and improve compost quality.

01 REFERENCE DOSE



60 ml / 1 L



1 L of prepared solution covers approx. **1–2 m³** depending on the exposed surface.

02 FREQUENCY

Light spray when adding material and each time the compost is turned.

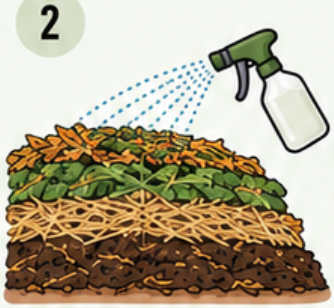
03 APPLICATION METHOD

1



Dilute 60 ml of product per 1 L of water.

2



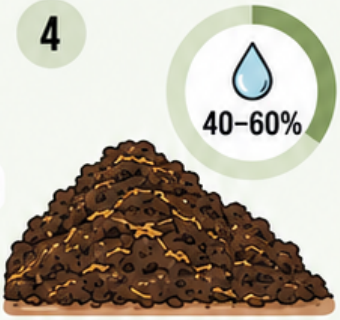
Lightly spray each new layer of organic matter.

3



Repeat during turning.

4



Maintain approximately 40–60% moisture, ideally close to 50%.

04 COMPATIBILITY / PRECAUTIONS

Compatible with composting and Bokashi techniques. Avoid materials contaminated with bleach or other biocides.

05 HOW TO TELL IT'S WORKING

Reduced or absent unpleasant odors, even transformation and progress toward humus/compost.

Reference dose. It may be adjusted slightly based on environmental conditions and system response.

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Sargassum · Low Accumulation

Microbial management of fresh and residual sargassum.

01 REFERENCE DOSE

0.5 L / 100 m²



BACKPACK SPRAYER EQUIVALENCE

250 ml product	+	**19.75 L** water
=		**20 L mixture** For approx. 50 m²

02 FREQUENCY

Per sargassum-arrival event; up to one application daily during active arrivals.

03 APPLICATION METHOD

1



Remove the bulk volume of sargassum first when appropriate.

2



Prepare 0.5 L of product + 39.5 L of water per 100 m².

3



Spray fresh/residual sargassum and the affected damp surface evenly, avoiding runoff.

4



Record the area response before repeating.

04 COMPATIBILITY / PRECAUTIONS

Do not mix with chlorine, sanitizers or oxidizing agents. Compatible sequentially with physical removal.

05 HOW TO TELL IT'S WORKING

Track odor, insects, temperature, new accumulation and H_2S when measurement equipment is available.

Reference dose. It may be adjusted slightly based on environmental conditions and system response.

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Sargassum · High Accumulation

Protocol for heavy sargassum arrivals.

01 REFERENCE DOSE

1 L / 100 m²



BACKPACK SPRAYER EQUIVALENCE

500 ml product + **19.5 L** water = **20 L mixture**

For approx. 50 m²

02 FREQUENCY

Base: once daily. Critical events: **provisional** maximum of two applications per day, at least 8 h apart, with reassessment.

03 APPLICATION METHOD

1



Prioritize physical removal of heavy accumulations and safe working conditions.

2

1 L product + **39 L** water

Prepare 1 L of product + 39 L of water per 100 m².

3



Spray residual material and new arrivals evenly.

4

Move down to the low-accumulation protocol when two consecutive assessments show improvement and lower arrival intensity.

High accumulation → **Low accumulation** → **Maintenance**

04 COMPATIBILITY / PRECAUTIONS

Do not respond to elevated H_2S simply by increasing the dose. Chlorine, sanitizers and oxidizing agents reduce microbial viability.

05 HOW TO TELL IT'S WORKING

Minimum field log: area, liters applied, sargassum arrival, odor, insects, temperature, physical removal and H_2S when measured.

Reference dose. It may be adjusted slightly based on environmental conditions and system response.

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Ponds / Natural Pools

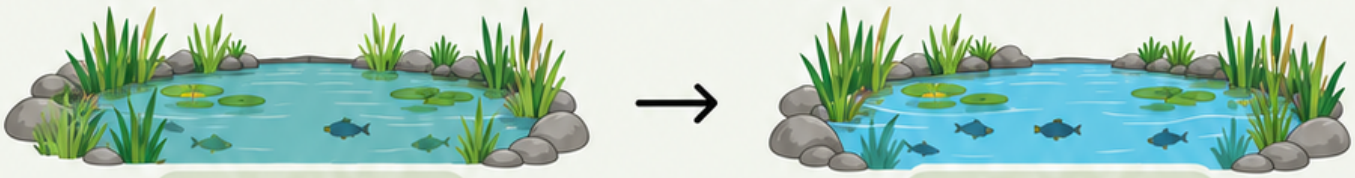
A more stable, living aquatic ecosystem.

01 REFERENCE DOSE

INITIAL
1 L / 2,000 L

MAINTENANCE
1 L / 4,000 L

Ponds · natural pools · systems with aquatic plants · constructed cenotes.



1 L / 2,000 L → 1 L / 4,000 L

02 FREQUENCY

Initial phase: weekly according to condition. **Maintenance:** monthly once the system is stable.

03 APPLICATION METHOD

1. Calculate the dose using the actual water volume present.
2. During the initial phase, apply 1 L per 2,000 L of water.
3. Pour the product directly into the system.
4. When clarity, odor, algae and sediment improve consistently in two consecutive observations, move to 1 L per 4,000 L.

04 COMPATIBILITY / PRECAUTIONS

Compatible with aquatic plants and fish. Do not combine with chlorine, algaecides, oxidizing agents, chemical clarifiers or conventional pool treatments.

05 HOW TO TELL IT'S WORKING

Less odor, greater water clarity, less algae proliferation and reduced/sedimented sludge. Greater presence and diversity of fauna may be a secondary sign.

Reference dose. It may be adjusted slightly based on environmental conditions and system response.

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Water Bodies / Restoration

Bioremediation to support the recovery of natural water processes.

01 REFERENCE DOSE

INITIAL

1 L / 1,000 L

02 FREQUENCY

EVALUATION

Extreme cases: approximately **24 h.**

Normal cases: approximately **48 h.**

MAINTENANCE

Weekly › Every two weeks › Monthly › Reinforcement every 6 months

As the system stabilizes.

03 APPLICATION METHOD



1. Estimate the water volume.



2. Apply 1 L of product per 1,000 L of water.



3. Distribute at several points and support circulation where it exists.



4. Evaluate response before repeating or adjusting the dose.

In higher-load systems, concentration may be increased according to response. If improvement is inadequate, perform a specific assessment before continuing to increase the dose.

04 COMPATIBILITY / PRECAUTIONS

Avoid chlorine, oxidizing agents and sanitizers.

05 HOW TO TELL IT'S WORKING

Observe water clarity/turbidity, odor, biodiversity and water-quality parameters relevant to the specific case.

Reference dose. It may be adjusted slightly based on environmental conditions and system response.

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Sap-Sucking Pests & Mites

Supports natural pest management and plant ecosystem resilience.

01 REFERENCE DOSE

66 ml / 1 L

02 FREQUENCY

Days 1–7: daily.
In heavy infestations, up to two applications per day, preferably in the morning and after sunset. If it persists, continue another week; then reduce to every 3 days and finally weekly maintenance.

Daily (days 1–7) → **Every 3 days** → **Weekly maintenance**

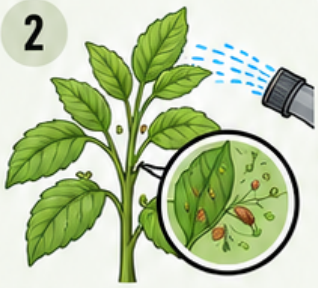
03 APPLICATION METHOD

1



Prepare 66 ml of product per 1 L of water in a spray bottle.

2



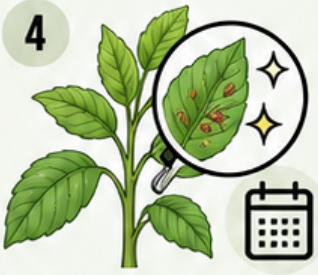
Spray the entire plant, including both sides of leaves and stems.

3



Support with application to soil/irrigation water.

4



Reassess after the first week and reduce frequency gradually as the infestation decreases.

04 COMPATIBILITY / PRECAUTIONS

Do not combine with pesticides or biocidal agrochemicals; compatible with organic management practices.

05 HOW TO TELL IT'S WORKING

Fewer visible pests, less new damage, less honeydew/sooty mold and recovery of plant vigor.

Reference dose. It may be adjusted slightly based on environmental conditions and system response.

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Laundry Care

Less detergent. Microbial care for your clothes.

01 REFERENCE DOSE

WASH

15 ml / 10 L

OR

RINSE

10 ml / 10 L

Choose one according to the objective.

02 FREQUENCY

With each wash cycle, according to the objective.

03 APPLICATION METHOD

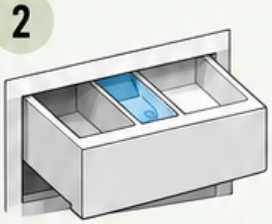
1



WASH | RINSE

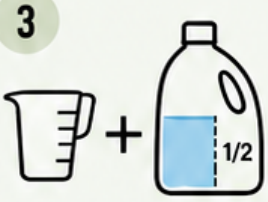
Choose WASH or RINSE.

2



Add the product to the appropriate washing-machine compartment.

3



WASH: 15 ml/10 L with approximately 50% of the usual detergent.

OR

4



RINSE: 10 ml/10 L.

Maximum reference temperature: 60 °C.

04 COMPATIBILITY / PRECAUTIONS

Compatible with detergents and fabric softeners. Chlorine, bleach and sanitizers reduce microbial activity.

05 HOW TO TELL IT'S WORKING

Primary: similar cleaning performance using approximately half the detergent.
Secondary: less musty odor in stored garments.

Reference dose. It may be adjusted slightly based on environmental conditions and system response.

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Washing Machine Maintenance

A cleaner washing machine with less mold over time.

01 REFERENCE DOSE

100 ml BM + **100 ml** white vinegar

BM = Beneficial Microorganisms

1:1 ratio · per cycle

02 FREQUENCY

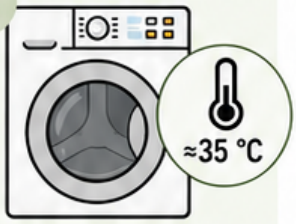
According to the equipment manufacturer's drum-cleaning recommendation.

03 APPLICATION METHOD

1. 
Use the washing machine empty.

2. 
Place 100 ml of BM in the dispenser.

3. 
Then add 100 ml of white vinegar to the same dispenser.

4. 

Run the drum-cleaning cycle at approximately 35 °C.

Priority: odors and mold. Also supports management of detergent/fabric softener residue and mineral deposits.

04 COMPATIBILITY / PRECAUTIONS

Do not use chlorine or hypochlorite-based bleach during the same cycle.

05 HOW TO TELL IT'S WORKING

Less odor and mold, less visible residue/mineral buildup and longer intervals between maintenance.

Reference dose. It may be adjusted slightly based on environmental conditions and system response.