Drain Ease™ Open

Application Sheet

A clogged drain can stop kitchen operations – whether it is a busy restaurant or a dinner for two at home. Drain Ease Open combines fast-acting chemistry to quickly open clogged drains with a patented beneficial microorganism that continuously degrades organic drain buildup. The long-lasting microbial action of Drain Ease Open helps maintain free-flowing drain lines and reduce the organics that can cause malodors.

Benefits

Fast, effective drain opener

- Independent laboratory test confirms that Drain Ease Open quickly opens clogged drains and effectively removes congested kitchen soil
- Helps maintain free-flowing drain lines and prevent drain blockages on a continuous basis by degrading organic compounds found in kitchen drains
- Reduces the need for additional drain treatment and maintenance
- Independent laboratory test confirms a Drain Ease Open performance superior to the leading brand

Long-lasting odor control

- Provides long-lasting odor reduction by breaking down odorous volatile fatty acids and odor-causing organic buildup
- Pleasant lemon fragrance provides instant freshness

Patented microbial technology

- Patented microbial technology for long-lasting grease interceptor performance, even under harsh or low-pH conditions

Certification

- EcoLogo™-certified formulation available

Product	Application	Specifications
Drain Ease™ Open	Drain opener and maintainer	• Liquid • Fully formulated • Ready to use • Lemon fragrance

Performance

Drain Ease Open has been confirmed by independent laboratory testing to open clogged kitchen drains and effectively remove congested kitchen soil made of grease, fat, starch, sugar, and protein. This same independent laboratory's tests show that Drain Ease Open performs better than the leading brand of drain opener.

The buildup of organics in the drain line is a major cause of blockages and slow-running kitchen and bathroom drain lines. Figures 1 and 2 show results of the performance of Drain Ease Open on kitchen and bathroom drain soil.

The data in Figure 1 show the results of a cleaning performance evaluation of Drain Ease Open on kitchen and bathroom soil spread onto a ceramic tile. 5.0 g (0.18 oz) of Drain Ease Open was left on the kitchen soil stain for 5 minutes and left on the bathroom soil for 30 seconds before rinsing for 15 seconds with water. Drain Ease Open demonstrates good efficacy on kitchen and bathroom soil fixed on a ceramic tile.

Figure 2 shows results of a test in which kitchen drain soil was spread onto the inner wall of test tubes to simulate drain soil. An untreated tube was used as control, and the treated tube was inoculated with Drain Ease Open microorganisms. After 10 days the tube was given a slight shake with medium evacuation, simulating a water flush. The treated tube released the main part of the residual soil remaining in the tube, demonstrating that the beneficial microorganisms in Drain Ease Open are able to grow or degrade organics in kitchen drain soil within 10 days.

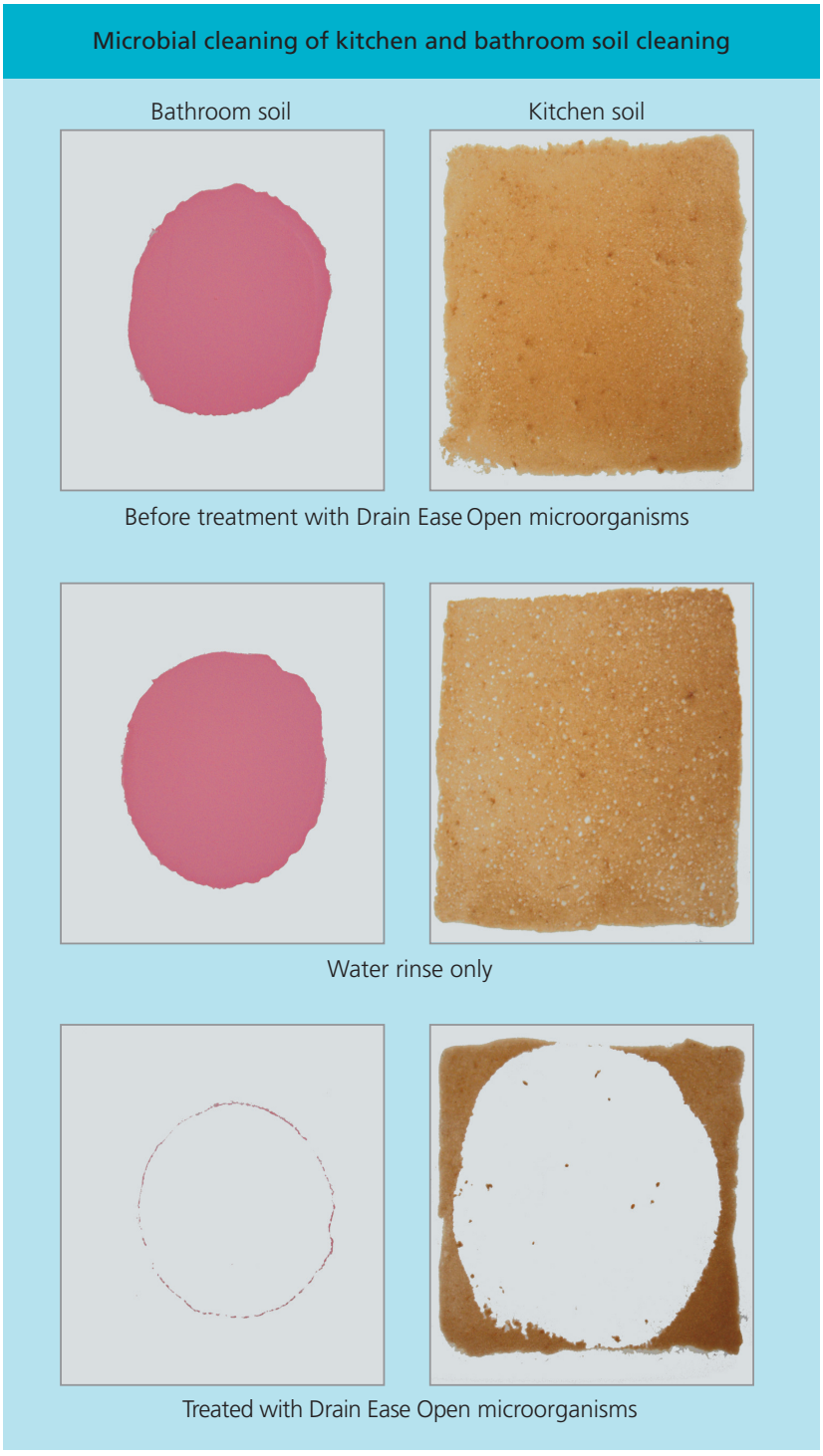

Fig. 1. Drain Ease™ Open effectively removes both bathroom soil (left) and kitchen soil (right) applied to ceramic tiles. After only 30 seconds of treatment with Drain Ease Open the bathroom soil is easily rinsed off the tile compared to the control (water), which leaves the soil almost unchanged. The same result appears after just 5 minutes of treatment time on the kitchen soil, whereas the control remains the same.

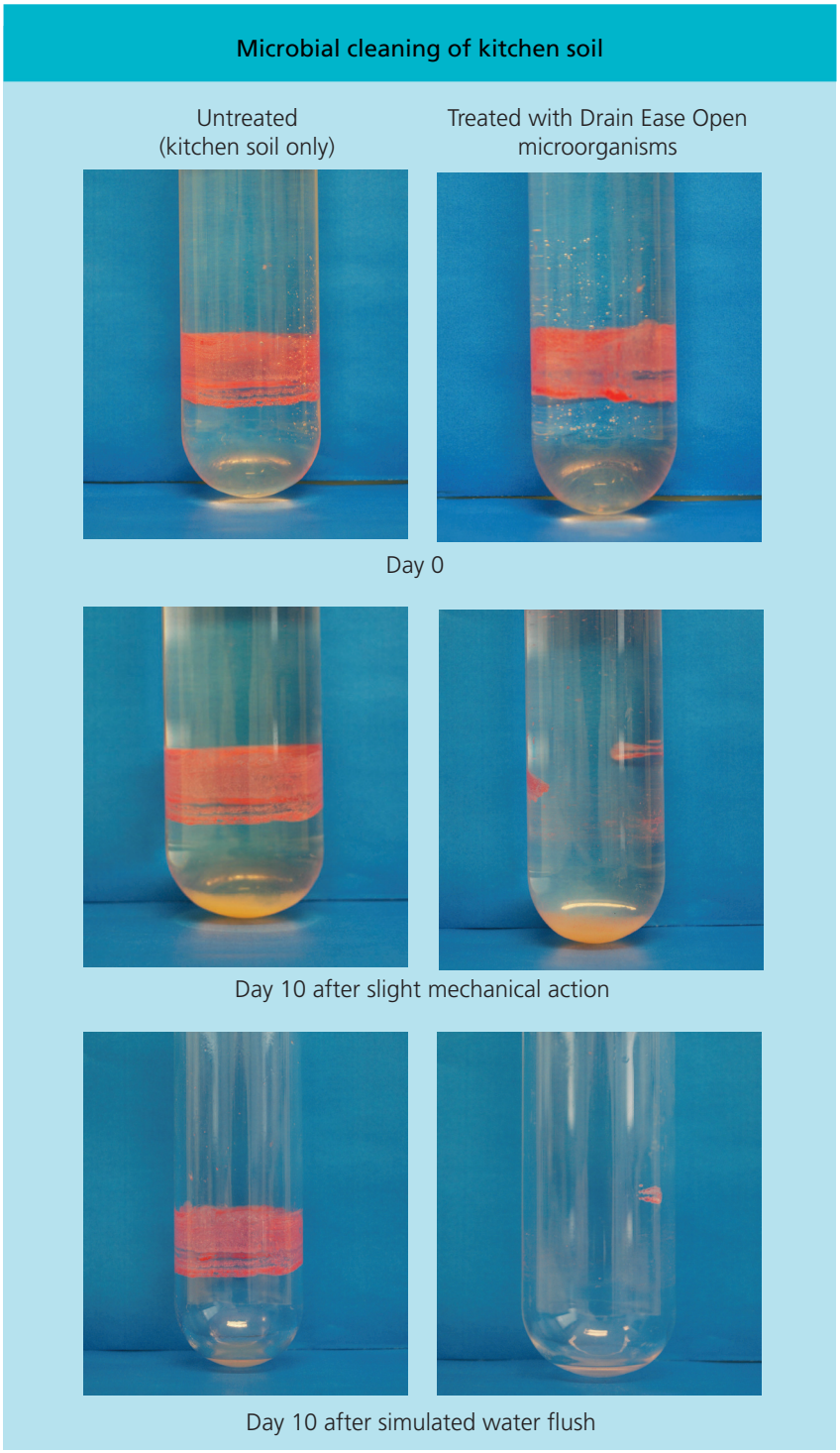

Fig. 2. Kitchen soil was stained red and treated with Drain Ease™ Open microorganisms. After 10 days the medium was evacuated, simulating a water flush. The control without treatment (left) shows no change, while the treated sample (right) shows almost complete soil removal.

Long-lasting and continuous activity on kitchen soil with Drain Ease Open microorganisms

The data in Figure 3 show that beneficial microorganisms in Drain Ease Open have a respiration activity when inoculated in organic medium simulating greasy kitchen drain soil. Metabolic activity is still observed after 16 days when organics are present. The oxygen uptake indicates the biological conversion of the organics into by-products (organics + O_2 $\rightarrow CO_2$ and H_2O) as well as new bacterial cells. An increase of the oxygen uptake demonstrates that microorganisms have a metabolic activity and degrade organics.

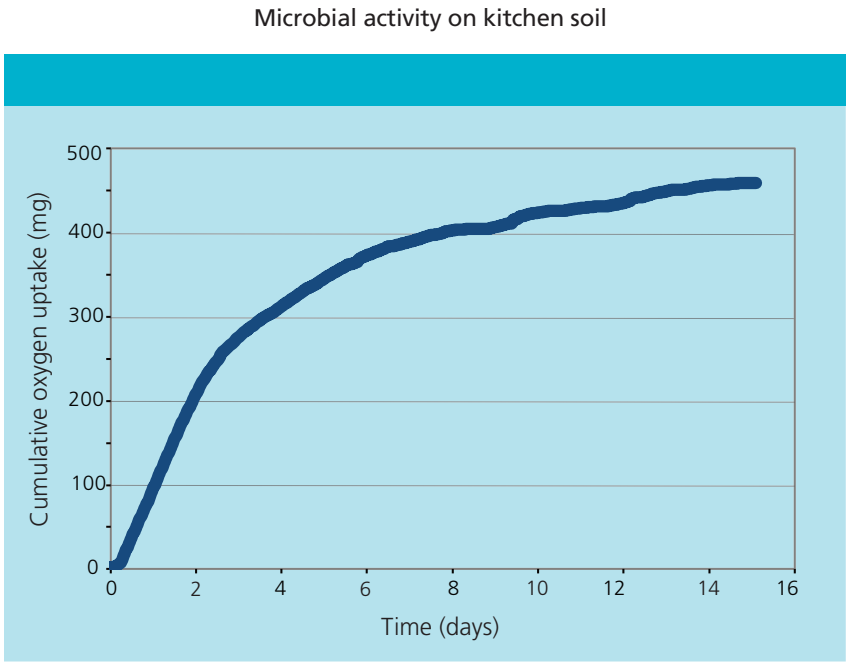

Fig. 3. The long-lasting, continuous degradation (15+ days) of kitchen soil and grease is demonstrated by the respirometric activity of the microorganisms in Drain Ease™ Open.

Microbial activity on odorous molecules and buildup

The data in Figure 4 show that microorganisms in Drain Ease Open are able to germinate on kitchen drain soil and consume all the organics present. When the organics have been consumed, the microorganisms become dormant (spore state) until a new food source is available. When new food is added in the drain environment, spores regerminate, become active, and continue to consume the organics present. When the food has been consumed, some of the microorganisms die while some become dormant (spores) until a new food source is available.

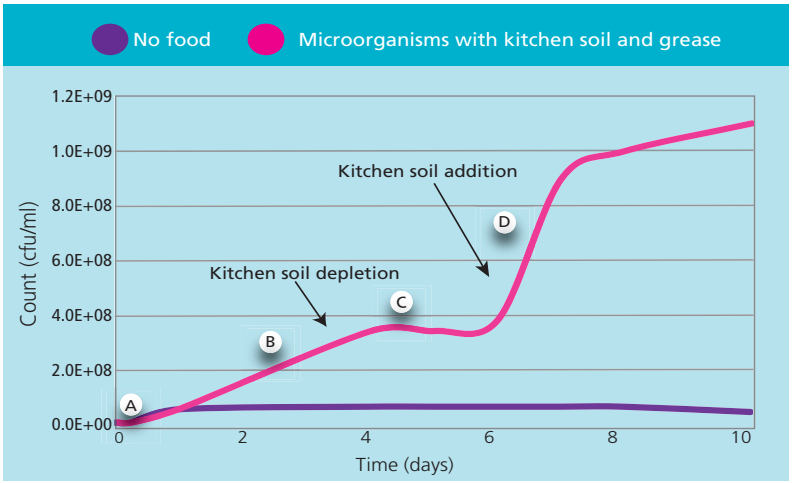

Fig. 4. The microorganisms in Drain Ease™ Open consume the kitchen soil and become dormant (spores) when all organics have been degraded. Microbial action increases with the addition of a new food source at day 6. This continuous degradation helps keep drain lines free-flowing.

Additionally, microscopic observations at 400X magnification of test flasks are made at different stages of microbial growth (Fig. 5). Dormant microorganisms (spores), vegetative (active) microorganisms, vegetative microbes transforming into spores, and vegetative microorganisms are observed.

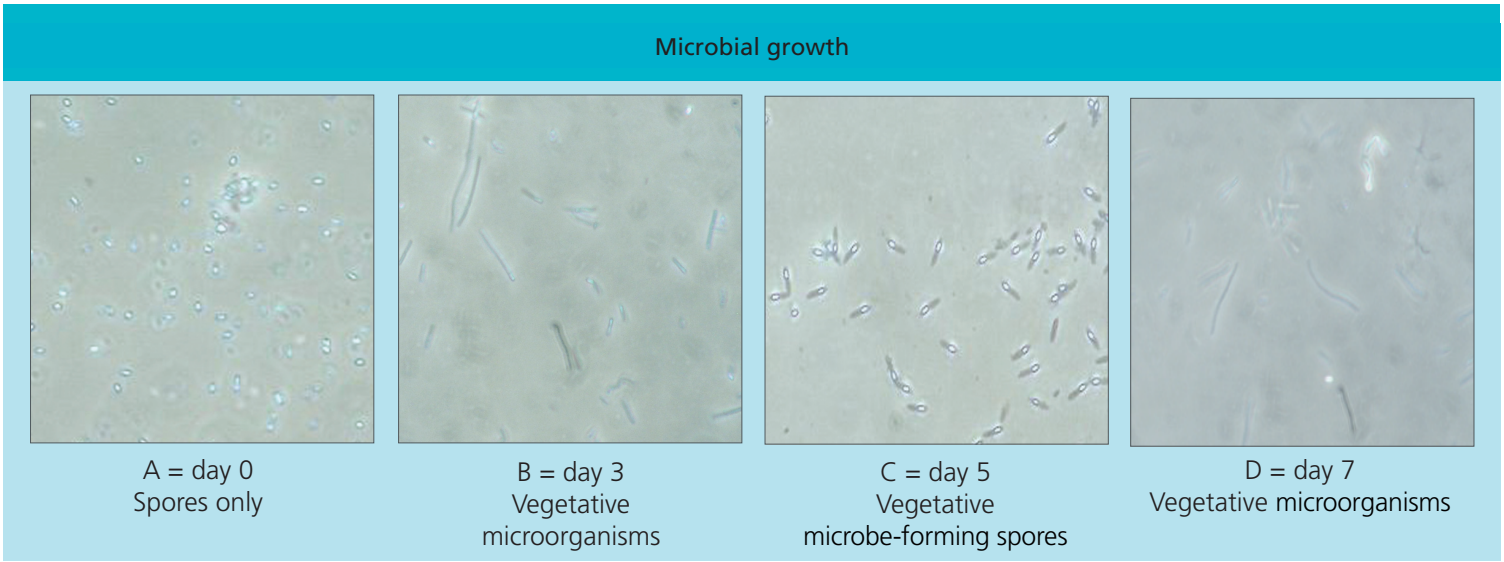

Fig. 5. Microscopic observation: Microbial growth with Drain Ease™ Open microorganisms in kitchen soil over 7 days shows that microorganisms return to spore (dormant) form in the absence of a food source.

Microbial activity on odorous molecules and buildup

Odors and buildup associated with drain lines can be a major problem for food service facilities and homes. As shown in Figure 6, the patented beneficial microorganism in Drain Ease Open helps reduce malodors and drain soil buildup by degrading both the short- and the long-chain volatile fatty acid (VFA) compounds found in drains.

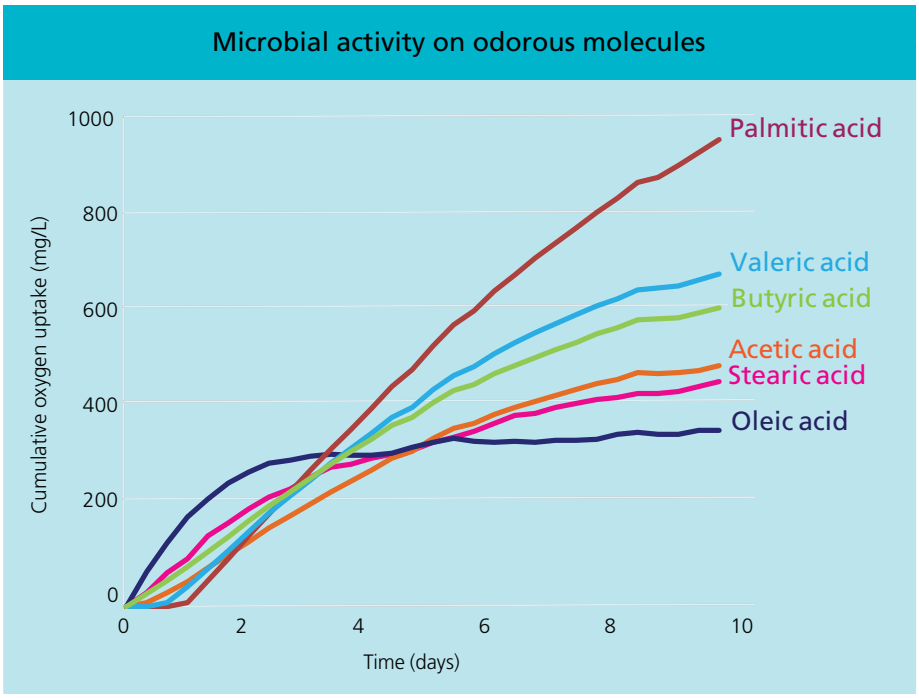

Fig. 6. The ability of a patented beneficial microorganism in Drain Ease™ Open to degrade various fatty acids responsible for malodors or buildup is demonstrated by a respirometry test. The results show that this microbe in Drain Ease Open can degrade both the long- and the short-chain fatty acids commonly found in kitchen drain soil.

Recommended use directions

Drain Ease Open is a liquid, ready-to-use product for drain lines. Apply directly to the head of the drain line.

RESIDENTIAL DRAIN LINES			
Operation		Treatment time	Daily dosage
Blockage	Start-up	When water is still in sink	10–12 oz / 296–355 ml
Slow-running	3-day treatment	At bedtime for best results	2–4 oz / 59–118 ml
Maintenance	Everyday/ongoing	At bedtime for best results	2 oz / 59 ml
INSTITUTIONAL DRAIN LINES			
Blockage	Start-up	When water is still in sink	16–20 oz / 473–591 ml
Slow-running	3-day treatment	During the least use	4–6 oz / 118–177 ml
Maintenance	Everyday/ongoing	During the least use	4 oz / 118 ml

Safety, handling, and storage

Safety, handling, and storage guidelines are provided with all products.