

Wood Cutting Board Preservation & Hygiene Guide

Capillary Dehydration Physics, Antibacterial Tannins, and End-Grain Restoration

1. Antimicrobial Mechanism: Wood vs. Plastic Boards

Board Material	Knife Scarring & Surface Physics	Bacterial Survival Rate (Salmonella / E. coli)
End-Grain Hardwood (Maple/Walnut)	Knife blade parts wood fibers without severing them; fibers re-close naturally.	99.9% Die-Off in 3-10 minutes. Capillary action sucks bacteria into dry xylem core; natural tannins kill them.
Plastic / Polypropylene	Knife leaves permanent jagged microscopic canyons that cannot be cleaned.	Massive Proliferation. Bacteria harbor in grooves; dishwasher heat warps board and creates microplastic shedding.
Edge-Grain Bamboo	High silica content; dulls knives faster but naturally water-repellent.	Good antimicrobial rating; requires frequent conditioning to prevent split seams.

2. Monthly Board Conditioning & Sanitization Routine

Maintenance Step	Execution Method & Chemistry	Wood Preservation Outcome
1. Immediate Wash	Hand-wash with warm water and mild dish soap; towel dry immediately. NEVER SOAK.	Prevents wood fibers from expanding unevenly and cracking along glue joints.
2. Mineral Oil Saturation	Apply food-grade pure USP mineral oil; let absorb for 6 hours; wipe excess.	Non-drying oil displaces water inside wood capillaries; prevents warping and drying.
3. Beeswax Sealant	Buff a warm paste of 4:1 mineral oil to organic beeswax across all surfaces.	Creates hydrophobic barrier preventing meat juices and beet stains from penetrating.