

Wood vinegar

Wood vinegar is a byproduct from charcoal production. It is a liquid generated from the gas and combustion of fresh wood burning in airless condition. When the gas is cooled, it condenses into liquid. Raw wood vinegar has more than 200 chemicals, such as acetic acid, formaldehyde, ethyl-valerate, methanol, tar, etc. Wood vinegar improves soil quality, eliminates pests and controls plant growth, but is slightly toxic to fish and very toxic to plants if too much is applied. It accelerates the growth of roots, stems, tubers, leaves, flowers, and fruit. In certain

cases, it may hold back plant growth if the wood vinegar is applied at different volumes. A study shows that after applying wood vinegar in an orchard, fruit trees produce increased amounts of fruit. Wood vinegar is safe to living matters in the food chain, especially, insects that help pollinate plants.

Wood vinegar is made from burning fresh wood in a charcoal kiln, made from a 200-liter oil drum and 120-cm-tall concrete chimney with a 4-inch diameter. The kiln contains 63-83 kg of fresh wood. Wood good for vinegar must have a heartwood.



Fig. 1. Pile wood in the kiln.



Fig. 2. (a) Put tile at the top of the chimney.
(b) The steam is condensed into liquid.
(c) Collect the vinegar drops from the bamboo or plastic pipe.

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Process

1. Cure wood that has heartwood and bark for 5-15 days.
2. Pile wood in the kiln (Fig. 1). Close the kiln and cover every hole with clay. Burn it at 120-430°C.
3. After 1 hour, put a tile at the top of the chimney (Fig. 2). If brown or dark brown drops appear on the tile, allow smoke to flow through a bamboo pipe so that the hot steam may be condensed into liquid.
4. Place a vessel to collect the vinegar drops from the bamboo pipe.
5. If wood is burned for 12-15 hours in a 200-liter oil drum kiln, it should produce 2-7 liters of wood vinegar. At this stage, it is called raw wood vinegar.
6. Leave the raw wood vinegar for 3 months to become silted. The vinegar will turn yellow like vegetable oil. After which, it will turn light brown and the tar will become silted. The top content will be a light, clear oil. Remove the tar and light oil, as

well as the dark brown translucent oil and the remainder will be sour vinegar (Fig. 3).

Application

Blend with water in a ratio of 1:50 (1 liter wood vinegar and 50 liters water), or up to a ratio of 1:800 (1 liter wood vinegar and 800 liters water). Spray it over plant shoots. Wood vinegar, like hormones, will be absorbed into twigs, trunks, or leaves. Plants will be stronger, and leaves will be greener and resistant to pests and diseases.

Benefits

1. Farmers can produce wood vinegar from branches trimmed from trees.
2. Wood vinegar is safe to human beings, animals, plants, and environment.
3. Wood vinegar helps plants to grow better and stronger, and be resistant to pests and diseases.
4. Crop produce is high quality and safe.
5. Low cost of production attributed to savings from cost of chemicals.



Fig. 3. The wood vinegar.

