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Mulch Combustibility

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SUMMARY

Mulch does so much good in our gardens that it's hard to think of it as causing problems. Many common organic mulches are combustible and can pose a real fire danger if used too close to buildings, especially in fire-prone areas.

Combustion characteristics of mulches vary.

Q: I live in an area that is somewhat fire-prone. Is it OK to use wood chips on the planting beds next to my house? They won't catch fire, will they?

A: For years, UC Master Gardeners have been singing the praises of mulch, especially organic mulches like wood chips, pine needles, and compost. Mulch does so much good in our gardens that it's hard to think of it as causing problems. However, a recent study conducted by the UC Cooperative Extension in cooperation with several other groups has determined that many common organic mulches are combustible and can pose a real fire danger if used too close to buildings, especially in fire-prone areas.

Combustibility of different mulches studied

In the study, eight different commonly available mulch materials were applied in a variety of ways, exposed to the elements for 2 ½ months, and then were set on fire. Researchers compared flame height, rate of spread, and maximum temperature of the fires to determine

which mulches were more or less combustible.

The mulches were tested on a hot, dry, windy day – typical weather during the fire season in California. The mulch materials tested included shredded rubber, pine needles, shredded Western Red Cedar, medium pine bark nuggets, Tahoe chips (a mixture of dried wood chips, bark, and pine needles), Tahoe chips with fire retardant, Tahoe chips in a single layer, and composted wood chips.

The combustion characteristics of the mulches varied. Some burned hotter or with taller flames, some spread more rapidly, some smoldered rather than actively flaming, but they were all combustible, and therefore, not suitable for use within five feet of structures.

Results of Study

Composted wood chips demonstrated the least hazardous fire behavior overall of the eight mulches tested. However, they are still combustible. Composted wood chips smoldered rather than



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flamed. This smoldering could go unnoticed during a wildfire and might be missed by firefighters.

Fire retardant on wood chips provided only five to ten minutes of fire suppression. After that, the behavior of fire retardant-treated chips was identical to untreated chips. Although using chips on an irrigated flowerbed may reduce ignitability, don’t count on having water pressure to wet down flowerbeds during a fire. Drip irrigation in flowerbeds typically does not wet the entire area. So even irrigated flowerbeds, if topped with combustible mulches, can pose a hazard.

Recommendations

The study’s authors have some recommendations for property owners who want to protect their buildings in fire-prone areas:

- Within five feet of structures, use only noncombustible rock, gravel, concrete, pavers, or ignition resistant plant materials such as irrigated lawn and flowers. If you use plants within five feet of structures, keep them well-maintained, watered, free of dead plant material, pruned, and lawns mowed.
- From five to thirty feet from structures, it’s acceptable to use

medium pine bark nuggets, Tahoe chips with or without fire retardant, and composted wood chips because these had the least hazardous combustion characteristics of the mulches tested. Do not use them in a widespread or continuous manner because they could transmit fire from one area to another. Separate areas mulched with these materials with non-combustible and ignition-resistant materials like concrete, gravel, rock and lawn.

Where to get more information

For more information about minimizing the risk of fire through appropriate landscaping techniques, see:

Landscaping Tips to Help Defend Your Home from Wildfire, by Pamela Geisel and Donna Seaver, UC Statewide Master Gardener Program; download from: <https://anrcatalog.ucanr.edu/Details.aspx?itemNo=8322>

Home Landscaping for Fire, by G. Nader; download from: <https://anrcatalog.ucanr.edu/Details.aspx?itemNo=8228>

These comprehensive pamphlets contain many links to other sources of information about creating a defensible fire-safe zone around your home.