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1954

Extension Service
University of Nebraska College of Agriculture
and U. S. Department of Agriculture
Cooperating
W. V. Lambert, Director

E. C. 1730

CP.

TREATING CHRISTMAS TREES TO REDUCE FIRE HAZARD

After investigating a number of methods considered to have possibilities for making Christmas trees less flammable, the U. S. Forest Products Laboratory has concluded that keeping the tree standing in water is about the most practical, satisfactory, and convenient method of those tried for reducing the fire hazard and preventing the needles from discoloring or falling.

Water Treatment --The procedure recommended for the water treatment is as follows:

1. Obtain a tree that has been cut as recently as possible.
2. Cut off the end of the trunk diagonally at least 1 inch above the original cut end. Stand the tree at once in a container of water and keep the water level above the cut surface during the entire time that the tree is in the house. If the tree is not to be set up for several days, it should be kept standing in water meanwhile in a cool place.

Decorative Coatings -- Additional protection against fire can be provided by the use of fire-retardant coatings in conjunction with the water treatment if the retention of the natural color of the foliage is unimportant. The following simple formulations are suggested:

Formula I

<u>Ingredient</u>	<u>Parts by volume</u>
Sodium silicate (water glass)	9
Water, containing a wetting agent, such as a detergent (about 1 teaspoon per quart)	1

Formula II

<u>Ingredient</u>	<u>Parts by weight</u>
Sodium silicate (water glass)	31
China clay	41
Water, containing wetting agent (about 1 t. per quart)	28

One coat of these formulations will greatly reduce the tendency for flames to spread; two coats are even more effective. The coatings may be applied either by dipping or by spraying. It may be necessary to thin Formula I for spray application, in which event more applications are necessary.

Fire-Retardant Chemical Solutions --Experiments at the Forest Products Laboratory have shown that the introduction of several fire-retarding chemicals into spruce resulted in one or more of the following: Needle discoloration, needle fall, increased combustibility. The increase in flammability was due to the fact that chemical solutions were taken up by the tree neither so rapidly nor in such large amounts as water and trees actually lost weight while being treated with chemical solutions. Thus, while the trees were taking up some fire-retardant chemical, they were losing another excellent fire retardant, water. As a specific example, ammonium sulfate caused serious discoloration of both spruce and balsam fir needles. Spruce needles started to fall 2 days after treatment and by 5 days were falling freely. Both spruce and balsam fir treated with ammonium sulfate were more flammable than water-treated specimens. The spruce was more flammable than the balsam.

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