

## Evergreen Needle Loss Heavy This Fall ...

Narrow-leaf Evergreens throughout the Midwest are experiencing unusually heavy needle loss this fall, according to James A. Fizzell, University of Illinois Horticulturist in Cook County.

Evergreens such as Pine, Spruce, Arborvitae are so named because of their habit of keeping their leaves (needles) through the winter. Under normal conditions, the needles are produced in the spring and live 2 or 3 years. When sufficient new growth has taken place on the tips of the branches, these older needles in the center drop off, having served their purpose of photosynthesizing carbohydrates for the tree.

The normal needle drop occurs during late spring and summer and is usually not noticed because of the density of new growth hiding it.

During the last week or so, all University Extension Offices throughout the North Central States have received a tremendous number of calls from distressed plant owners reporting browning and dropping of needles from all types of evergreens this fall.

Inspection of these plants, says Fizzell, reveals no disease or insects, but premature shedding of one and two year old needles. These needles should not drop until next summer under normal conditions.

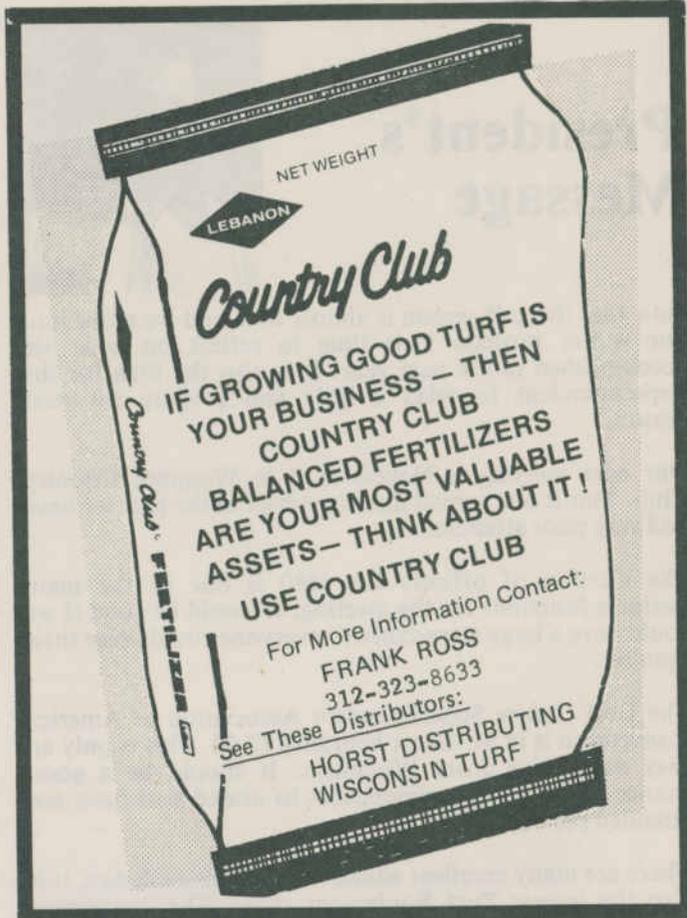
But, continues Fizzell, weather conditions here have been anything but normal for at least the last two years. We have experienced two unusually severe winters and two droughty summers since some of these needles were produced.

Current season growth on affected plants is generally normal and healthy. The older, affected needles have been exposed to one and sometimes both of the severe seasons. Since disease or insect problems are not involved, we can assume the premature drop is a result of this stress.

Fizzell says plant owners should not be alarmed as long as the current season's growth at the tips of the branches is healthy and normal. If the new growth is weak or is turning brown, root injury or canker disease may be involved and a tree expert should be contacted.

While we don't know all the factors involved, the stress on evergreens can be reduced by making sure they go into winter well watered. In exposed situations, screening to protect the plants from winter sun and winds may be helpful, Fizzell concludes.

James A. Fizzell



## HOW ACCURATE IS YOUR RAIN GAUGE?

Rainfall records have been kept for thousands of years with very little difference between measurement techniques - rainfall is still collected by placing a vessel of prescribed dimensions on the ground. Since the 1800's wind has been identified as chief cause of rain gauge error. Even before then people were placing rain gauges in pits so that gauge orifices were at ground level and wind influences were eliminated. However, this presented new problems, so gauges were raised above ground and mounted with windshields.

Earl Neff, hydraulic engineer with the government SEA, studied rainfall data at four different locations and times throughout the Pacific Northwest to determine the most accurate way to measure rainfall.

He found that rain gauges exposed to wind catch 5 to 15 percent less rain than pit gauges and errors for individual storms range from 0 to 75 percent, depending upon the storm's wind velocity. Neff says that the error most often made in a rain gauge reading is the assumption that the gauge is completely accurate.

How much does a rain gauge gauge? Seldom as much as falls from the sky.

Charles E. (Scotty) Stewart



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