

**Local Spruces Turning Brown**  
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Recently several calls have come in regarding Colorado spruce and Black Hills spruce that have been showing brown needles.

Many factors play into browning of spruce needles. First of these is normal needle drop. Evergreens shed older needles as growth continues. This needle drop is often confused with disease or insect problems. Older needles, those on the inside of the tree, that are three to five years old will turn yellow then brown and eventually fall off the tree. Usually we don't notice this as the newer growth does a good job of hiding this fact. Needle drop in this manner is a gradual process and should not concern us.

Needle browning we should be concerned about now include herbicide, drought, animal, salt injury, and nutrient deficiencies. Even air pollution can cause browning of evergreens. Determine what part of the tree has turned brown and you should be able to make a good guess as to what is happening.

- **Herbicide damage** – browning of newer growth. Herbicidal injury is influenced by the type of chemical used, the application rate, temperature during application, and wind speed and direction during application.
- **Drought damage** – needles gradually turn yellowish-green and then light brown. This starts at the top of the tree and progresses downward and from the outside in.
- **Animal injury** – dog urine can cause some browning and dropping of lower branches on arborvitae and junipers.
- **Salt injury** – needles will brown from the tips downward if the tree has had direct salt spray from roads. This browning typically takes place during the late winter.
- **Winter damage** – water loss during winter can cause winter burn. Keep trees watered well going into winter to reduce winter injury.
- **Nutrient deficiencies** – needle discoloration due to this will get progressively worse over several years. High pH soils can cause iron chlorosis as iron is not available to plants at high levels of alkalinity.-

Source: Alberta Agriculture, Food and Rural Development

More information on the causes of brown evergreens can be found at the Alberta Agriculture web site at [www1.agric.gov.ab.ca/\\$department/deptdocs.nsf/all/agdex4144](http://www1.agric.gov.ab.ca/$department/deptdocs.nsf/all/agdex4144). There are also several diseases that can cause browning in evergreens and more information is needed to determine if this is that case. Samples can be brought in to determine if a disease or insect pest is present (see contact information below).

More information on horticultural topics can be found by visiting us online 24 hours a day on the Pennington County Extension website at [www.co.pennington.sd.us/extension/extsvc.html](http://www.co.pennington.sd.us/extension/extsvc.html), or by calling me at 605-394-2188 or email to [ricky.abrahamson@sdstaate.edu](mailto:ricky.abrahamson@sdstaate.edu).