

What is a Pole Farm?

How much thought have you given to utility poles? OSU researchers have given them a lot!

What are we testing?

To reduce decay and insect damage, existing utility poles are treated with wood preserving chemicals. At the pole farm, researchers from OSU test different preservatives for their effectiveness, longevity, and environmental impact. This knowledge allows companies to use the least amount of chemical at the lowest frequency while obtaining optimal results. This research also informs climatic considerations, which vary by region and significantly affect how much preservative is needed to treat a pole. As you can imagine, a pole in rainy Western Oregon will need more protection than a pole in Oregon's drier Eastern side. Because of their high value, we want them to last as long as possible.

Who benefits from these studies?

The benefits are more widespread than you might think! In 1980, OSU formed the Utility Pole Research Cooperative, made up of utilities, chemical companies, wood treaters, and inspection agencies. As a third party member, OSU provides these groups with accurate, objective data to help them operate more effectively and efficiently.

Consumers also benefit from reliable, long-lasting products. Using preservatives more efficiently helps reduce environmental exposure to chemicals, and the longer life of the pole reduces utility costs and the need to harvest trees.



How long has the pole farm been here?

The pole farm was founded by Professor T.J. Starker in 1928 (pictured above). This is one of the longest-running and largest utility pole preservative treatment projects in the U.S., as well as the oldest research project on the OSU Research Forests. Besides utility pole research, the farm is also used for testing wood treatments for decks, railroad ties, buildings, and other wood products.

Utility Pole Research Process



First, OSU installs a Douglas-fir test pole. Different tree species are tested in different geographic regions, depending on what the most commonly used trees are for utility poles in each area.



Next, researchers drill a hole into the pole and insert the chemical treatment. The hole is sealed, and the chemical is allowed to diffuse throughout the wood. The amount of time the chemical remains in the wood depends on the type of chemical being tested.



When it is time to analyze the pole, researchers use an increment borer to drill into the wood and extract a small sample. These samples are taken from multiple places on the pole, depending on the specific test.

OSU Research Forests 2017 cf.forestry.oregonstate.edu 541-737-4452



Why wood?

Wood is a versatile, renewable resource. A single tree meeting all the requirements to be a utility pole can serve as a piece of infrastructure for an average of 60-80 years, given that it is properly treated and maintained. A Douglas-fir pole not treated with preservatives will only last 3-5 years, and an untreated cedar pole may average 30-60 years. Treating wood with preservatives increases product longevity, reducing the number of trees needed over the years. Timber management policies ensure that trees are replanted. Many forests managed for timber also provide ecological diversity and wildlife habitat.



In a lab at OSU, researchers use the sample to examine chemical spread and persistence. They also measure damage from fungi and insects, and the soil is tested for chemical runoff.



Research findings are shared with members of the Utility Pole Research Cooperative and the general public. Utility pole manufacturers use this information to create the most effective utility pole treatment process possible.