Springtime usually holds much anticipation for the forest landowner as the outdoors wakes up once again. Usually, we are thrilled with nature’s beauty of dogwoods flowering under pine savannahs and wild azaleas blooming in hardwood river bottoms. Then, suddenly, our attention shifts toward our pines and the large swollen area of its trunk that has this bright orange appearance cracking out from the bark. At first, you think your pine trees bleed orange too, but sadly you have just discovered the showy stage of fusiform rust.

What is fusiform rust?
First, you must understand that fusiform rust usually occurs on loblolly and slash pine and requires an oak species as an alternate host to complete its life cycle. The orange spores (aeciospores) you see on the pine trees trunk can also be found on limbs. These spores travel by wind and land on young/tender oak leaves (typically water, willow, southern red, and laurel oak) in early spring. The oak leaves then begin to develop tiny orange spots (pustules) on the underside of their leaves that progress into spores (urediospores). These spores re-infect oak leaves to produce a hair-like protrusion of spores (teliospores) that later turn into the next spore (basidiospores). Once again, the wind transmits the spores back to the pine to infect new tender tissue growth areas between the bark. This all happens by late spring. The spores then develop into the fifth spore (pycniospores) on the pine and will form the swollen area on trunks and limbs that produce the large orange-yellow area you will see next early spring.

What can we do about it?
With most life cycles of undesirable outcomes, the easiest answer is to eliminate one part of the puzzle to break the chain of events from happening. For fusiform rust, that means deciding to eliminate either the pine or the oak. Typically, the pine is a financial gain producer, and we do not want to lose that, hence why you are probably reading this article. The elimination of oak can be possible if the pine plantation is of large enough scale, and especially if the oak is deemed too great of a nutrient competitor for your pine anyway. But even if you eliminated all of your oaks, it’s still unlikely to eliminate fusiform rust if you are having issues due to oaks found on neighboring properties.

The best and simplest way is to plant seedlings that are genetically selected to have fusiform rust resistance. Most pine seedling nurseries have various genetic families that are better disposed to exhibit certain traits. Fusiform rust resistance is just one of the many different traits that genetic breeders look for when raising pine families to sell. As pine genetics continue to advance, most pine families are better at fusiform resistance than they were 30 to 40 years ago.

If fusiform rust shows on the pine’s limbs instead of the tree’s main stem, the landowner can prune the affected limb off the tree. This option is only viable if it happens in low enough frequency that the task is not greater than the desire to remove the rust. Height considerations and equipment limitations play greatly into this equation as well.

Lastly, another option is to plant a different pine species if you have soil conditions that allow you to do such. Shortleaf pine and longleaf pine are both typically more resistant to fusiform rust.

Why is fusiform rust such a big deal?
Fusiform rust galls leave behind an area of poor wood quality. You may have heard some timber
industry professionals refer to them as ‘cat faces’ or Cronartium (which comes from its species name Cronartium quercuum f. sp. fusiforme). These weak areas on the main stem are subject to breakage during high wind events, leading to the tree’s mortality. If the tree does manage to live long enough to make it until harvesting, either thinning or clearcut, it is recommended to remove the stem from the forest. The decision to cut out the old fusiform rust cankers during the wood merchandising process should be left up to the forester and communicated to the logger to maximize landowner profits. Wood merchandising is the act of cutting the tree into sections depending on products that can be made from it. The decision to cut out fusiform rust cankers is based on the frequency of fusiform rust in the stand and the local sawmill’s tendencies. Typically, sawmills will administer deducts toward a log, or a load of wood, if the fusiform affects the log too much.

Hopefully, this article will help you better understand fusiform rust, its causes, how it can be managed, how it can be prevented, and how it can be worked around. Again, the best way to prevent fusiform rust is to minimize oak interaction and plant fusiform rust-resistant genetic families during reforestation when you know your area has the constant presence of oak.

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