

spores cling to the grain, and when it is sown they begin to grow up through the tissues of the plant and take possession of the head, and appropriate the food that would otherwise go to make the grain kernels. Wheat, barley, and oats have each two kinds of smut, closed and loose. The closed smut of the wheat and barley, and both kinds of oat smut, can be controlled by treating the seed grain. The closed smut of wheat is called stinking smut. The open smut of wheat and barley is early, and the spores are dispersed while the grain is just forming, and so it gets right into the kernels and cannot be reached by spraying the seed. Hot water dipping of the seed is sometimes employed, but this destroys some of the grain also. For the treatment of seed grain a forty per cent solution of formaldehyde is used. Corn smut is not subject to direct treatment. Smut masses should be burned.

**Rust.** Wheat, oats, and barley are subject to rust. The rust appears about the time grain is ready to head out. It consists of reddish brown, powdery streaks on the leaves and stem. The spores are blown about on the leaves and stems of other plants. Damp weather or dew induces multiplication where the spores fall. Finally the rust turns black, and persists on the straw over winter. Damp weather is thought to induce rust, but it only increases it.