

Marks Remarks by Mark Rowen Lincoln County Educator 5-10-07

This article on Rhubarb Toxicity after freezing Temperatures is reprinted from an earlier news release by April Borders-District Horticulture Educator, Yankton County.

The recent cold temperatures that we have been experiencing have wreaked havoc with several of our spring crops. The plant that seems to be causing the most phone calls to my office is rhubarb. Many homeowners have been calling because they are concerned about the safety of eating the frozen plants. When temperatures are around freezing (32° F) we seldom see any severe problems. But when temperatures drop below 28° F, major damage occurs and we have the potential for problems.

When temperatures hit the 20's, like we have recently had, the cells in the rhubarb petiole (leaf stem) and leaf tissue expand (much like a can of soda pop in the freezer) and eventually rupture. When the cells rupture, the tissue can no longer provide support for the plant and we generally end up with a pile of "mush."

The leaves of the rhubarb plant contain high concentrations of oxalic acid. As the leaf tissue breaks down, oxalic acid crystals are released and can move down in the stems. When oxalic crystals are eaten, they can cause oxalic acid poisoning. Symptoms could be anything from gastrointestinal problems like abdominal pain, nausea, vomiting, or diarrhea all the way to respiratory problems where the throat and tongue can swell, blocking the air passage and causing suffocation. The presence of high concentration of oxalic crystals in the rhubarb leaves is the main reason that the leaves are not eaten. There are some oxalic acid crystals in the leaf stem, but not in significant or harmful amounts.

So here is the rule of thumb to follow when temperatures have fallen into the 20's. Take a look at the overall health of the plant. If the plant is still standing firm and erect, the leaf stem could still be safely eaten after cutting off the leaf blade. If the plant is limp and wilting, it is best to avoid eating those stalks. Crystals may have migrated to the stalks making them unsafe for consumption. Simply cut or pull the stems off and discard them. You can safely place these stems and leaves into a compost pile.

Once growing conditions improve, new stalks will emerge from below the ground and these new stalks will be safe to eat. If at any time you feel that the plant is in a questionable condition, you are best to follow the adage of "better safe than sorry" and don't eat it.

Now what about freezing rhubarb for use later in season? It is perfectly safe to freeze rhubarb as long as the plant is healthy to begin with. Cutting up and freezing rhubarb stalks for cooking does NOT increase the oxalic acid crystals because the leaves were removed prior to the freezing process.

For more information please contact the Yankton County Extension Office at 665-3387.