The doe kicked and ran out of the food plot like a hard-hit deer, hunched with its tail tucked, and I heard loud crashing sounds not far into the thicket. Confident I had venison on the ground within easy reach, I watched the remaining light fade from the woods and waited on my hunting partner to join me. Yet, once we started tracking, neither my hunting partner nor I could find any blood with our flashlight beams, and acres of barely penetrable briars in the surrounding cutover did not help. After a restless night, I returned at daylight and was relieved to find the doe within minutes, piled up just 10 yards off a trail I had crawled along the night before. Nearly 14 hours had passed since I shot, and though it was January 2, the overnight low in South Georgia was only 46 degrees. I wondered, was it safe for me to eat this deer?

Coincidentally, only a few weeks before this, I had spoken to Dr. Cathy Cutter, professor of food science and the Food Safety Extension Specialist at Penn State University, who is also a hunter and author of numerous guides on game and fish preparation. I asked her the question many hunters have wondered about, especially in southern latitudes: What’s the deadline to locate a deer in warm weather before it’s no longer safe to eat?

Her answer was, as you might guess, “It depends.”

“What type of shot are we talking about?” she asked. “If you rupture the digestive tract, you release a lot of bacteria. Also, what’s the temperature? And how long did it take you to find the deer? All these things come into play.”

**Racing Against Bacteria**

The enemies, Dr. Cutter told me, are bacteria of many types, including E. coli and salmonella, billions of which already reside in the digestive tracts of deer, as well as staphylococcus bacteria that are present on the hide and hair and can be carried inside the deer by arrows or bullets. According to Dr. Cutter, when temperatures are above 40 degrees F, bacteria grow rapidly once the deer is dead, and the higher the temperature the faster the growth.

“If it’s cold weather, and it’s a clean shot, you might be able to do fine,” she said. “You really aren’t going to know until you find the deer, estimate the time of death, and see the type of shot.”

Recalling that conversation, I studied my doe. The deer was hit through both lungs and had died quickly – too quickly to leave a good blood trail but not before finding thick cover. So, it seemed like I had a “clean shot.” But as I studied the exit wound, I smelled a bad odor similar to gut contents. Not good. Though the air temperature had dipped to 46 degrees overnight, no doubt the internal temperature of the muscle and organs never got anywhere near that low. The doe had gone down in a tangle of small saplings that held her upright with legs tucked – one of the reasons she had been difficult to spot the night before, since there was no white belly showing to reflect lights. This position probably also helped retain body heat. I knew I needed to reduce the temperature of the meat as quickly as possible, so I dragged the deer out, loaded it, and hurried to the skinning pole.

**Above 40 degrees F, do your best to recover deer quickly. Meeting that goal begins at the trigger.**

The source of the smell was rumen contents leaking through the esophagus, which had been ruptured by the bullet as it passed through the lungs. The rumen itself, as well as the intestines, were completely intact, yet the smell of rumen contents was strong as I dressed the deer. And it wasn’t the ordinary bad smell of “fresh” rumen contents, it was somehow worse. Obviously, escaped rumen bacteria had been growing rapidly in the chest cavity, just as Dr. Cutter said. I was extremely careful to remove the guts without causing any new leakage from the bladder, intestines or rumen. The hindquarters, tenderloins and backstraps were pristine. They had not come in contact with rumen contents or blood from the wound. But the skinned-out shoulders were both bloodshot and damaged, and they both smelled of rumen contents. I regretfully opted to discard them.

Using a different knife than the one I gutted the deer with, I boned, cleaned and iced down the rest of the meat in a cooler, and after a few days of aging on ice, I processed the hindquarters for the freezer. The meat had the normal color, texture and smell of fresh venison. For the final test, that night my wife made venison stroganoff with a hindquarter roast that I kept out of the freezer, and it was delicious. My family slept peacefully through the night without any gastric eruptions.

**Great Venison Starts With Accurate Shooting**

Unfortunately, there’s no simple deadline for recovering your venison. The more time that passes, and the more of the meat that is in contact with bacteria released by a gut shot or transported inside by a projectile, and the higher the temperature, the more likely the meat is not safe to eat. And that’s even if the meat smells fine and is cooked well.

“Smell is not always a good indicator,” said Dr. Cutter. “E. coli and salmonella can be present even without a bad smell.”

Thorough cooking will get rid of microorganisms like bacteria and staphylococcus, but if they have been growing in warm conditions for many hours in the meat, toxins are produced that may not be destroyed by cooking. “If staphylococcus from hair or the hide has been growing in the meat, no amount of cooking is going to get rid of the toxin that is produced,” Dr. Cutter told me.

The clear indicators include insects. If maggots arrive before you do, I hope I don’t have to tell you that you’re too late. Also, if there is a visible green slime or discoloration on the meat, be safe and discard it.

In the end, there’s no easy rule for determining if your venison spoiled before you recovered it. In very cold weather, there’s no hurry. But above 40 degrees F, do your best to recover deer quickly. Meeting that goal begins at the trigger, so practice with your weapon of choice, choose only shots that are within your proficiency range, aim for the heart/lung vitals, and wait for a broadside shot at a motionless deer. Then, [**follow these blood-trailing tips**](https://www.qdma.com/blood-trail-deer/).

These steps will ensure not only that you recover and enjoy high-quality venison but that the deer is treated with the respect it deserves.

A lengthier version of this article was originally published in QDMA’s *Quality Whitetails* magazine. To begin receiving every issue and every article, [**join QDMA today**](https://www.qdma.com/get-involved/join/).

Sept 9, 2015 Lindsey Thomas Jr.