"There is a difference between toxic and poisonous."

Why You Should Kill Your Characters With Love, Not Plants

by Peter Stekel

Inspector Jones walks into the room and surveys the crime scene. There is no sign of a struggle. The body lies, fully clothed, upon the bed where the victim has apparently lain down, hands clutching the throat. The coroner, looking something like Jack Klugman, eases himself into the room. Jones asks him for an estimated time of death.

"About 2 pm," he wheezes.

"Odd time to take a nap," says Jones. His eyes continue to roam across the room and he relaxes his thought processes, letting intuition and experience take over.

The room is a typical bedroom and contains the typical bedroom things: chest of drawers, clothes closet, dirty underwear, and a bedroom entertainment center. Photos on the walls look like family and friends. In the private bath are the usual assortment of toiletries. So far, nothing unusual. In the living room, Jones notes a holiday-greeting poinsettia; some of its blood red leaf-like bracts are missing. But wait! This is the time of June brides not jolly fat men.

Jones calls out to the coroner, "Hey, Mac!"

The coroner saunters over. "Whatcha want?"

Cool and suave, like he's practiced in front of the mirror next to his Bogart poster, Jones says, "Ten-to-one says our victim in there," and he motions over his shoulder with a cocked thumb, "was poisoned."

"What makes you think that?" asks Mac. He's been in this business a long time, and he's worked with Jones for ten years. If Jones has an angle on a killing, then Mac knows to listen.

Jones indicates the innocent-looking poinsettia to Mac and the assembled blue suits. "Exhibit number one," he says with a flourish.

"The plant killed him?" a not so bright uniformed public servant queries.

Jones shakes his head, patient with the less endowed. "Nah. Someone forced the victim to eat the plant's leaves. Poinsettias are deadly poisonous." Jones turns to Mac and lightly taps him on the chest. "I bet you find, oh; let's say, a dozen or so leaves in the victim's stomach when you cut him open.

That afternoon, back at his desk, Jones gladly sets aside a pile of paperwork when his phone rings. It's Mac, the coroner, and he's calling to confirm Jones' guess.

"It was poinsettia, alright. You're pretty slick to have seen that, Jones," he says with admiration.

Jones leans back in his chair and smiles. "Cause of death is easy in this case. Now we've got to find out who did it and why."

There's only one thing wrong with this little tale. Contrary to what most people believe, poinsettias are not poisonous. They also taste horrible and getting someone to eat one would require an unrealistic leap of faith in your story.

In fact, many of the commonly accepted "poisonous" plants that make their way into novel and short story plots, movie scripts, and radio drama are not deadly at all. Unfortunately for writers, the plants we associate with killing people are either benign, require a huge dose to make a person ill, or are mostly unavailable. The inability to disguise the plant material as anything but a nasty tasting concoction makes them hardly worth consideration as either a plot device or a murder weapon. The one exception is in people who have genetic hypersensitivity compound in the plant. But these plants aren't poisonous: they kill because a person goes into anaphylactic shock.

Another important point: There is a difference between toxic and poisonous. If you cross over some threshold, then the former becomes the latter. Yet, we are exposed to toxic compounds every day. They're in the air we breathe, water we drink, and food we eat. If you take your clothes to be dry cleaned, then you are exposing your skin to the residues of toxic solvents. Remember the toxicologists admonition, "Everything is toxic. What matters is the dose."

There are some toxic plants that everyone in North America is familiar with. The most famous are poison oak and poison ivy. Neither kill. They cause an allergic reaction that

results in acute contact dermatitis. Some people have no reaction to them at all. It is said that the California Indians used to rub the leaves of poison oak into their skin to eliminate skin lesions and rashes. Anyone who owns a dog knows that canines are little affected by these plants. And you're also intimately aware of what happens when the family dog comes home after running through a bramble of poison oak and you pet them!

If you do choose to poison your fictional characters with some of the few truly deadly plants, you should be aware of something. If you give too much information, a "copy cat" might decide, "Here's a good way to get rid of Aunt Milly!" You could find yourself in court facing a judge and a not-so-happy prosecutor. For that reason you'll have to do your own research about dosage and application by reading medical journals and botany texts.

There are lots of debates about why some plants are edible and why others are toxic. These non-edible plants contain chemicals which make them so, and the consensus is that these compounds are metabolic by-products. So, most likely, plants aren't "trying" to make us sick or kill us. We learn very quickly which ones to favor and which ones to stay away from. Domestic livestock are not so intelligent and cases of acute toxicity from eating too much of the wrong thing are exceedingly common with cattle and sheep. However, biologically speaking, those plants which are unpalatable or cause ill-affects have an advantage over their brethren which are favored by grazers since the good tasting specimens are more likely to be heavily impacted by "plant predators."

Our most deadly plants fall into a class called, **psychotomimetic**. Not only are they dangerous to use, they're illegal too. This toxic group of plants is one that people are well acquainted with because they are also known as hallucinogenic plants. There are five species which most people know of: marijuana (*Cannabis sativa*), peyote (*Lophophora williamsii*), Fly agaric (*Amanita muscaria*), ergot (*Claviceps purpurea*), and psilocybin (*Psilocybe sp.*). Each of the above, except for marijuana, works by mimicking central nervous system functions. They are able to do this because they are chemically related to serotonin, a natural brain chemical. Tetrahydrocannabinol, from marijuana, is unlike its alkaloidal hallucinogenic cousins and therefore leads to a different kind of intoxication.

Of the above named plants, the most lethal is the Fly agaric. Physical and mental affects from this red, with white spots, mushroom vary greatly from person to person and with geography because the fungus is widely distributed in the New and Old World.

The historic narcotic use of *Amanita muscaria*, or Soma, extends to India and the Vedas, holy hymns written some 3500 years ago, and thus makes this fungus the oldest mind altering plant known to man. Some researchers believe that the ancient Scandinavian *berserkers*, who went on periodic killing binges were intoxicated by Fly agaric. Until the Russians introduced alcohol in the early 18th century, Fly agaric was the sole intoxicant for Siberian peoples.

Amanita muscaria is a frequent cause of poisoning in North America by Asians who are familiar with the plant's more benign chemical variants collected from central Asia. Poisoning is accompanied by confusion, disorientation, hearing and visual disturbances, macropsia, muscle twitching, and sleep. Death is caused by liver failure as toxins accumulate in this organ. Once a person begins experiencing symptoms, there is no known cure.

Only slighty less deadly is ergot, a fungal parasite on domestic and wild rye. It is responsible for the famous "St. Anthony's Fire," a medieval malady in which entire villages were known to go on crazy, murderous, rampages after eating flour unknowingly infected with the fungus. Poisoning is accompanied by blood being shut off to the extremities, causing gangrene infections. Early records speak about arms and legs falling off living bodies. Death is slow and painful, attended with psychotic hallucinations. Before legislation required routine agricultural inspections, ergot poisoning was frighteningly common in Europe. Ergot is also a source of LSD, one of the more psychoactive chemicals known to man.

Marijuana, peyote, and psilocybin are accountable for mind altering properties but are not known to cause any *direct* deaths. Each has its proponents and opponents in the real world and it is not the intention of this article to advocate the use of these illegal plants. However, the general familiarity of the public with the effects of these drugs is such that it is no longer reasonable to have fictional characters raging through the pages of a story committing all sorts of heinous crimes while intoxicated.

Of the non-psychotomimetic drug plants that it is possible people might ingest, the most notable as poisons are foxglove (*Digitalis-purpurea*), castor-bean (*Riccinus communis*), poison hemlock (*Conium maculata*), and death camas (*Zygadenus sp.*). Many other plants are toxic, or fatal, to domestic livestock by causing photosentization, absorbing poisonous selenium from the soil, or producing undesirable flavors in milk products. However, they are beyond the scope of this article.

Foxglove is native to Europe and is a commonly grown ornamental through out the United States. The plant has been used for hundreds of years as a medicine, notable for the drug digitalis. The leaves contain the highest concentration of toxin and

the affects of poisoning, stomach irritation, slow pulse, and contracted pupils, are cumulative.

The oil, extracted from the seeds of Castor-bean is very potent. It is a purgative, and the symptoms of poisoning are vomiting, gastric pain, diarrhoea, and thirst. If large amounts of the seeds are eaten at one time by people, general weakness and collapse may result. There was a time, during the 19th century, when castor oil was part of every family's pharmacopeia. It was also a time when patent medicines contained cocaine, heroin, or morphine so it is easy to understand why castor's ill affects were considered mild.

Socrates was considered a bad man by the political elite of Athens. He said some things he shouldn't have and he was sentenced to death. The method of execution was to drink an infusion of poison hemlock, one of the deadliest poisons known to the ancient world. The symptoms are a general weakening of the muscles, leading to paralysis of the lungs and death. The victim is normally lucid to the end and this explains the stories of Socrates teaching his pupils up until his last moments of life.

Another weed, like foxglove, imported from Europe, Poison hemlock is a plant known to most rural school children and farmers because it is so common along drainage ditches and slow moving water courses. Nearly all poisonings can be treated by inducing vomiting, which is bound to happen anyway if a person consumes any portion of this foul-tasting species. The seeds are the most virulent portion of the plant.

Death camas is most likely to cause poisoning amongst people foraging for native foods since it resembles wild onion to the inexperienced eye. Despite its name, death is highly unusual from consuming the plant but the victim is bound to get incredibly ill and feel like dying. The name probably came about to distinguish Death camas from the Quamash, an edible plant known to many as Camas, or Blue camas. On the other hand, cows have been known to die after ingesting massive quantities of Zigadenus elegans while foraging for grass.

As you can see, although Inspector Jones had a nice idea at the beginning of this article, it is highly unlikely that killing off one of your characters with poisonous plants is realistic. In all but a few cases, poisonous plants are foul tasting or must be ingested in such quantity as to make it beyond belief that a character would be fool enough to eat them. Livestock are frequently poisoned because they ingest the poisonous plants while feeding non-specifically upon surrounding vegetation. Any fictional character, as well as a real person, would have to be comatose to do the same.

In sum, if you're looking to poison a character in your story with a plant, it would be easier to make up something exotic, throw in the proper botanical jargon, and avoid the legal entanglements from copycat criminals looking for new ways to do in their Aunt Milly.

Peter Stekel is a botanist and a feature writer for several newspapers in the Puget Sound region. He has recently finished a crime novel, ***Collateral Damage****, and no one eats poisonous plants in it.*