Mothballs: the Insecticide

By Joe Wolf
Polk County Master Gardener

Mothballs kill moths; that makes them an insecticide. Most of us were introduced to mothballs by our parents and grandparents. Those mothballs smelled terrible but looked like innocent little balls. But, think about what they were used for! They were used to protect clothes or other fabrics, made from natural fibers, from moths. They killed the moths (adults, juvenile and eggs) before they could damage the woolens. In the United States, mothballs were first labeled as an insecticide in 1948. There is one fact that all of us should always remember about insecticide labels. The label is the law. The label tells us the proper, and only proper way, to use the insecticide. To use it differently is against the law.

Mothballs should only be used in closed, sealed containers. Examples of these containers are: air-tight chests, trunks, and garment bags. Dry cleaning bags are not sufficient. If you have ever used mothballs, you know what they smell like. That odor is the insecticide vaporizing from the surface of the mothball. Mothballs are made from one of two different insecticides: naphthalene or paradichlorobenzene. They act by vaporizing at room temperatures. It is the vapor that kills the moths. Both of these insecticides can be dangerous to your health, the health of your family and the environment. Outside of a sealed container, anyone in the house, can be exposed to them. As your nose can tell you, the vapor spreads far and wide. If you can smell the vapor, you are inhaling the insecticide.

You can be exposed to the insecticide in any of four ways: by contact through your skin, by inhaling the vapors, by accidentally consuming the mothballs, or by handling the mothballs with your hands and then handling food. The following is what the UF/IFAS article “The Facts about Mothballs” (see reference below) says about symptoms of poisoning:

“People have developed headaches, nausea, dizziness, and/or vomiting after being exposed to naphthalene vapors. If someone breathes in enough of the vapor or eats a mothball containing naphthalene, they might develop hemolytic anemia (a condition in which red blood cells are destroyed and removed from the bloodstream). Small children have also developed diarrhea, fever, abdominal pain, and painful urination with discolored urine after eating naphthalene. Dogs that have eaten naphthalene mothballs may have lethargy, vomiting, diarrhea, lack of appetite, and tremors.

People who have been exposed to paradichlorobenzene have experienced nausea, vomiting, dizziness, fatigue, and headaches. Its vapor can also irritate the eyes and nasal passages. If paradichlorobenzene contacts the skin for a prolonged period, it can cause a burning sensation.
If a pet eats a mothball made of paradichlorobenzene, they may have vomiting, tremors, and/or abdominal pain. Paradichlorobenzene may also cause kidney and liver damage in pets.”

A large dose of the active ingredient in paradichlorobenzene can poison the liver, destroy red blood cells, harm the skin, and central nervous system. It is known to cause censor in rodents. It is reasonable to conclude that it can be carcinogenic in humans.

You do not need mothballs or other chemicals to protect clothes and material made from wool. These items can be dry cleaned, which kills the moths (adults, juvenile and eggs), and then sealed in an air tight container.

It may seem funny to talk about eating mothballs, but very small children put practically everything in their mouths. In 1989 there were 4,918 cases of mothballs being eaten by children under six in the United States. Mothballs can come in multiple forms besides a ball. You can buy them as flakes, crystals, blocks, scented packages, and balls of different sizes. Some of these are even colored like candy, and at least one is sold that smells of lavender. Poisoning is much more serious for children.

Gardeners will sometimes put mothballs in the garden in an attempt to keep wild animals and maybe a neighbors pets away. They cannot legally be used in the garden. Furthermore, there does not seem to be any real evidence that this works in Florida. Mothballs work by the evaporation of the insecticide from their surface. In the landscape the breeze will blow away the vapors and rain will wash the active ingredient into the soil. In the soil, it can be taken up by plants. Plants can also take up some from the air into their leaves. You would certainly not want these insecticides in your vegetables.

Legally mothballs can only be used in sealed containers. To use otherwise is illegal and potentially harmful to you and your family’s health.

Mothball article by Florida Department of Agriculture and Consumer Services
http://www.freshfromflorida.com/content/download/33195/813755/Moth_balls_brochure_web.pdf

UF/IFAS article:  http://edis.ifas.ufl.edu/pi254

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