

# The "Blue Baby" Syndrome

The Environmental Protection Agency (EPA) has set a maximum contaminant level of 10 parts-per-million (ppm) for nitrate-nitrogen in public water supplies. This level provides a margin of safety regarding a significant risk for human health. EPA believes that water containing nitrate-nitrogen at or below this level is acceptable for drinking every day over the course of one's lifetime and does not pose any health concerns.

Nitrate is relatively non-toxic substance that occurs naturally as part of the nitrogen cycle. However, nitrate can be converted readily by bacteria into nitrite. This occurs in the environment, in foods, and in the human mouth and gastrointestinal tract. Once nitrogen

is converted into nitrate it can have harmful health effects. For example, high nitrates in drinking water can cause methemoglobinemia resulting from the reaction of nitrites with hemoglobin in red blood cells affecting the ability of the blood to carry sufficient oxygen to individual cells of the body.

Until infants reach about six months of age their digestive system has a diminished capability to secrete gastric acid, thus the pH level can rise to 5-7. At this pH level bacteria proliferates increasing the transformation of nitrate to nitrites. Thus, exposure to nitrate at levels in excess of 10 ppm can result in higher risk of methemoglobinemia. Methemoglobinemia, also known as blue baby syndrome,

is characterized by a reduced ability of the blood to carry oxygen.

Most adults have the ability to rapidly convert methemoglobin back to oxyhemoglobin so that even with relatively high levels of nitrate/nitrite intake the red blood cells can still carry enough oxygen to the body's cells.

If the condition is identified early and is not life-threatening, no treatment is needed other than a change to drinking water with less than 10 ppm nitrate-nitrogen. The methemoglobin will be reduced spontaneously to hemoglobin within two to three days. For severely affected infants treatment by a doctor is recommended. (DJ)

# How about that wood stove

Wood stoves are not good sources of quick heat.

Compared with a gas stove or furnace, a wood stove requires a longer start-up time. Even after a new fire is established in a wood stove, it requires an additional period to heat the stove and accumulate a hot bed of coals. This can be coupled with the fact that wood stoves are usually a "point" source of heat. They often aren't connected to a duct distribution system, which is usually the case with gas furnace systems.

Wood stoves are not an efficient source of heat for "taking the chill off" cool fall or spring mornings.

Because wood stoves don't operate efficiently when the draft (oxygen) is cut back (not including stoves with catalytic combustors), large stoves are frequently self-defeating. For a wood fire to burn efficiently and cleanly, it must burn hot most of the time. Many who buy wood stoves think that a larger stove is



smoldering so they can conveniently open the draft in the morning to begin heating the house. A banked stove gives little heat and is not an effective heat source.

Instead of banking a stove at night, allow the fire to die out after everyone in the house goes to bed. In the morning, build a new fire. If you need heat for a short time, use an auxiliary "quick-response" source, such as a natural-gas stove or furnace.

A wood stove is most efficient (efficient and safe) when it is used in cold weather (below 32 degrees and falling) and for longer than one hour. Remember, a wood stove is really a cold-weather heat source. There is nothing scientific about the above temperature and time period. Those are simply suggested levels.

Don't use petroleum fuels to start a fire in a wood stove. This includes charcoal starters. (DJ)

better. This is not always the case. Stoves burning with the draft turned down are burning at a greatly reduced efficiency – about half the active (hot) burning rate, and most creosote is produced during the low or cold burn stages.

Wood stoves aren't designed to "hold" a fire. Many people want to "bank" their stoves at night. They slow the fire to

## Acreage Insights



# Tractor safety tips (part 3)

Tractors are one of the most important pieces of equipment on a farm, yet they are also among the most dangerous. More deaths are caused by tractors than by any other type of farm accident. It is therefore imperative that tractor owners routinely check their tractors and keep in mind the following safety guidelines:

Make sure you check all fluid levels, fan belts, tire pressures, and hydraulic lines, and check for fluid leaks before every use.

Be sure to have a slow moving vehicle emblem in good condition mounted on the rear of the tractor. The tractor and towed implements should also be outfitted with the appropriate


reflectors and lights. These things are a must, and will help protect your from a rear end collision.

Review safety procedures in your manual regularly. Your operator's manual is the best safety guide you have, so make good use of it. Give yourself a few days to get used to new equipment, and study the manual carefully.

Finally, no matter how much they beg, never let your small children ride with you on the tractor. One recent 20-year study of tractor fatalities found that in accidents involving an extra rider, 73 percent of the deaths were children under the age of 10. Don't let your child become a farm fatality statistic. Say no to tractor rides. (DJ)

## University of Nebraska

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**Tractor Safety Course for youth ages 14-16 starts March 23. Contact Lancaster County Extension Office for details. 441-7180**



## Acreage Owner's Guide available

A guide for acreage owners entitled "A Place in the Country: The Acreage Owner's Guide" is available. The guide was developed by a team of extension educators to answer many of the commonly asked questions regarding buying and living on an acreage. The booklet is divided into 12 color coded sections covering a variety of topics ranging from "Assessing the Rural

Life" and "Knowing Your Responsibilities" to "Handling Waste Water," "Controlling Pests" and "Living with Wildlife". It also includes a section on things you should know as a Nebraska landowner and who you should contact for more information. If you would like a copy of the guide, contact the Lancaster County Extension Office. Cost of the publication is \$1.00 plus postage. (DJ)

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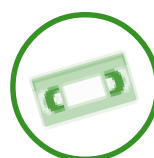
### NUFACTS (audio) Information Center

NUFACTS audio message center offers fast, convenient information. In the Lincoln area call 441-7188; for the rest of Nebraska call 1-800-832-5441. When directed, enter the 3-digit number of the message you wish to hear.



### Acreage & Small Farm Insights Web Site

Visit our Internet web site at: <http://www.ianr.unl.edu/ianr/dodge/acreage/index.htm> to learn about Extension programs, publications and links to other acreage and small farm information.



### "Part-time Farming" video

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