

PROBLEM SOLVERS

by Balakrishna Rao, Ph.D., and Thomas P. Mog, Ph.D

Ammonium nitrate safety

Problem: *Is ammonium nitrate fertilizer explosive and dangerous to transport or store? Would you please discuss its safety from the explosive point of view? (North Carolina)*

Solution: I think you have mistaken ammonium nitrate fertilizer for ammonium nitrate which is explosive. These are two different products.

The ammonium nitrate is a low-density product produced for blasting purposes and then sensitized with fuel oil and ground walnut hulls. Heat and pressure from the blasting cap or dynamite can trigger the material to explode. This product is classified as a blasting agent by the U.S. Department of Transportation.

Ammonium nitrate fertilizer is a high density product produced for agricultural purposes. This can be purchased and transported in bulk or bags. It is classified as an oxidizer by the U.S. Department of Transportation. It oxidizes in the presence of heat, producing nitrous oxide and other gases. This nitrogenous nutrient is safe in storage and transportation. It will not explode when exposed to heat, fire, etc. Reports indicate that it can become potentially dangerous only when the material becomes contaminated with organic (carbon-containing), combustible or reactive materials such as organic chemicals, oils, solvents, acids or chlorates.

According to the reports, in case of fires involving ammonium nitrate fertilizer, in storage or in transportation, firefighters should be aware of the following:

1 Ammonium nitrate fertilizer dust is not explosive. Tests by the Bureau of Mines have reportedly verified this fact.

2 Ammonium nitrate fertilizer will not burn except when supported by combustible materials. It will melt and decompose when exposed to fire and heat, and its oxides will support combustion - even in the absence of oxygen.

Firewood unaffected by disease

Problem: *Is there any danger in using elm trees infected with Dutch elm disease as firewood? How good is this wood for fire? Appreciate your comments in this regard. (Ottawa, Canada)*

Solution: I am not aware of any particular danger in using elms infected with Dutch elm disease fungus. If the tree also had bacterial wetwood disease, then it may present a problem in drying and burning. Further, it may have an unpleasant odor. The diseased wood may also be infested with insects and serve as a breeding ground for bark beetles, which can spread the disease to other elms nearby if the wood is not used before the beetles emerge from overwintering. To minimize this problem, remove the bark to facilitate further desiccation of wood, overwintering bark beetles and fungus.

Reports indicate that the wood is difficult to split and may present a problem in initial lighting. It is

considered as having low to medium BTU value. For example, one cord of air-dried American elm would have equivalent energy of about 0.4 ton of coal or 103 gallons fuel oil.

Microbes and nitrogen fertilizer

Problem: *Recently, I bought a product that contained microbes which supposedly make nitrogen fertilizer when applied to the soil. Is it true if I use this there is no need to apply any other fertilizer? (New York)*

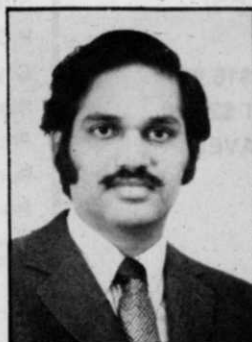
Solution: Higher plants primarily absorb nitrate or ammonium nitrogen for growth and development.

In nature, there are some microbes that can "fix" nitrogen and convert it to ammonium or nitrate for plant use. Certain soil inhabiting bacteria and blue-green algae can fix nitrogen. You might have also heard of the nodule-making bacteria in legumes which can fix nitrogen. Remember that not too many plants in nature have this ability. Therefore, I am not sure whether the product you have can fix enough nitrogen to support plant growth since nodule development is dependent on plant species, proper moisture, pH and temperature of the soil.

Silvex use still pending

Problem: *How effective is 2,4-DP against hard to control weeds like oxalis, ground ivy, violets and wild onion? Is there any chance that silvex will be available soon for use on lawns? (Pennsylvania)*

Solution: 2,4-DP provides acceptable control of the weeds mentioned except for violets. Silvex cancellation hearings are still proceeding and, at the present time, no decision has been reached regarding its status for use on home lawns.



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Questions should be mailed to Problem Solver, Weeds Trees & Turf, 7500 Old Oak Boulevard, Cleveland, Ohio 44130. Please allow 2-3 months for an answer to appear in the magazine.