Mercury: Symbol, Hg. (Often called quicksilver.) Atomic weight 200.61 (compared to hydrogen, atomic weight 1.008). It is said to be the most unpredictable element in kinds and properties of compounds it forms. Hg played an important part in the alchemy of the Middle Ages. It is a potent poison. Pure Hg is a silvery liquid at ordinary temperatures. "Quick-silver" means "alive and moving silvery metal." It conducts electricity, is used in thermometers, barometers and in alloys with other metals. Gold and silver dissolve in mercury.

In nature, Hg is found as cinnabar, a red sulfide associated with drops of native metal. Most mercury is produced in Italy, Spain, Calif. and Tex. It is marketed in iron flasks of 75 lbs. each. Annual production is about 24,000 tons. The United States produces 9 per cent of the world total.

Mercury long has been used as a fungicide. Bichloride of mercury ($HgCl_2$) is used as a vermicide (worms) as well as a control for brown-patch. Calomel (HgCl) is used in human medicine and is a widely-used fungicide (dollarspot). Calomel goes into water solution with great difficulty, is helped by the addition of an equal amount of common table salt.

Solubilized organic forms of mercury are used to reduce bacteria, slimes, algae and other organisms in paper making. Phenyl-mercury acetate is used for certain weed as well as disease control.

Best-known antidote for mercury poisoning is white of egg (albumin) with which it combines directly. Action of Hg may be so fast that no antidote may be entirely successful.

Primers for cartridges are prepared with mercury fulminate, an extremely explosive substance, made from mercury and nitric acid in the presence of alcohol.

are needed. If, for example, P and K are shown to be adequate, then nitrogen only need be applied for satisfactory preparation for winter. If P is adequate, with K deficient, then N and K should be used. Potash is especially important in preparing for winter because of its influence on the winter hardiness of plants.

Kind, Amount Important

Fall use of nitrogen deserves careful consideration. Both the kind and the amount of nitrogen are important. Soluble sources (urea, nitrates, sulfates) must be used with discretion since their complete, immediate availability may force grasses into undesirable rapid growth, causing them to become so "soft" at the onset of winter that winter survival will be poor. One wonders if this may not have been partially responsible for recent wide scale loss of many warm-season grasses.

Organic sources of nitrogen (ureaform, natural organics) do not force rapid growth by virtue of their manner of release to the plants. Nitrogen release from organics is controlled by soil organisms which are extremely sensitive to environmental changes. In effect, the grass plants will be furnished nitrogen in amounts that closely parallel the needs of the plants.

For this reason then, fall fertilization should be concerned primarily with organic sources of nitrogen (plus P and K as needed) to give grasses the best chance to develop winter food reserves in accordance with their needs. Another sound reason is that fall applications of insoluble nitrogen create a reserve of residual nitrogen which, unleached, unused and unchanged, will be there in the soil ready to be released as soon as microbial

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