Agriculture Working Group Natural Resources Cluster

ISSUE SUMMARY: Methyl Bromide

Summary

Methyl bromide (MB) is a gas used extensively as a fumigant by farmers, food processors and those who transport, store and otherwise trade in more than 100 agricultural commodities. Virtually all MB manufactured for commerce in the U.S. is produced in Arkansas.

About 85 percent is used in soil fumigation, a process where MB is injected into soil to kill fungi, nematodes and competing weeds before crop planting begins.

Much of the remainder is used in commodity treatment and fumigation. Many nations, including the U.s., require fumigation of agricultural imports to prevent the introduction of new pests and plant diseases. The united states Department of Agriculture (USDA) has stated that there are few alternatives and substitutes available for some pre-planting uses and none for commodity treatment and fumigation.

In the past year, scientists have begun to examine MB's role in stratospheric ozone depletion. A high percentage of the substance (as much as 75 percent) is generated naturally by organisms in the world's oceans. The key scientific question has been whether man-made MB contributes to ozone depletion and, if so, to what extent. Although scientists agree that important questions remain unanswered, in November 1992, the Montreal Protocol (an international treaty dealing with ozone depletion) was amended to list MB as an ozone depleter. This and other amendments to the Protocol must be ratified by at least 20 nations, including the U.S., for this finding to trigger U.S. Clean Air Act provisions requiring the phased withdrawal of this chemical.

Existing U.S. EPA policy is to aggressively seek prompt removal of ozone depleting chemicals. The issue here is whether the science is sufficiently clear to justify a decision at this time to eliminate a substance that is clearly vital to food production and public health, before adequate alternatives and substances are commercially available.

Background

1. Uses

According to the USDA and industry sources, the production, shipping, storage and production of more than 100 agricultural commodities depend on MB, including:

Almonds	Apples	Apricots
Baled Tobacco	Bales	Barley
Beans (All)	Beets (Roots)	Blueberries
Brazil Nuts	Brushnuts	Butternuts
Cabbage	Cantaloupe	Carrots
Cashews	Cherries	Chestnuts
Cipolini Bulbs	Citron	Cocoa Beans
Corn	Cotton	Cotton Seed
Cucumbers	Dried Peas	Eggplant
Filberts	Garlic	Grapefruit
Grapes	Hay (Alfalfa)	Hickory Nuts
Honeydew Melon	Horseradish (Roots)	Jerusalem Artichoke
Kumquats	Lemons	Limes
Muskmelons	Nectarines	Oats
Okra	Onions	Oranges
Parsnips (Roots)	Peaches	Peanuts
Pears	Peas (w/pods)	Pecans
Peppers	Pimentos	Pineapples
Pistachios	Plums	Popcorn
Potatoes	Processed Tobacco	Prunes
Pumpkins	Quinces	Radishes
Rice	Rutabagas	Rye
Salsify Roots	Sorghum (grain)	Squash
Strawberries	Sugar Beets	Sweet Corn
Sweet Potatoes	Tangelos	Tangerines
Tomatoes	Turnips	Walnuts
Watermelons	Wheat	Yams
Zucchini		

In addition, reforestation programs commonly depend on MB to allow saplings to become established.

II. Substitutes and Alternatives

Under FIFRA and other federal environmental and worker safety statutes, many prospective alternatives to MB have been eliminated or severely limited. Securing regulatory approval the introduction of new substances is, appropriately enough, lengthy, expensive process. Therefore, compared to a decade there are relatively few chemicals available with any of the useful properties of MB.

According to a technical assessment conducted by the United Nations Environment Programme (UNEP) with significant involvement from the U.s. EPA and USDA, there is no one fumigant available or currently contemplated that is capable of replacing MB. For a few commodities, a combination of chemicals may serve as a replacement however, in several of these instances, the combination of substitute chemicals may result in water and soil contamination. Some candidates also may affect global warming.

organic farming has produced reasonably good results only in some very limited settings. In the Netherlands, tulip bulb producers have had good results with steam fumigation on raised, indoor beds. But, neither approach -- organic farming or steam -- has any bearing on agriculture conducted on the scale common in this country or with most of the commodities listed above.

An alternative to current practices is greater use of technologies to significantly reduce MB emissions.

III. Science

Many scientists believe that MB affects the stratospheric ozone layer and that, because of its short lifespan as a stable molecule, it causes its damage in a condensed period of time.

Because most MB is generated by the oceans, there is no way to control most of the substance that is found in the stratosphere. The unresolved scientific question is whether man-made MB contributes appreciably to ozone depletion. Research-conducted cooperatively by NASA and industry scientists -- is seeking to answer some of these questions.

MB's Ozone Depletion Potential (ODP) value of 0.7[1], contained in the recent amendments to the Montreal Protocol, does not take into consideration several important factors currently being researched. Scientists believe that the final calculated ODP could be significantly lower or slightly higher. A lack of data on MB and bromine in the stratosphere has hampered decision making.

[1]Ozone Depletion Potential values represent an indexing of various chemicals' relative harm to stratospheric ozone. Values in excess of 0.2 are regarded under the Clean Air Act as "Class I" ozone depleting chemicals, which are to be phased out of production and use.

IV. Regulatory and political status

EPA has asked OMB for approval to proceed with a rulemaking, to list MB as an ozone depleter and commence a phase-out. As of this date, OMB **--** in consultation with USDA and various scientists **--** has not concurred with EPA's position.

In part, EPA argues that it must respond to a petition filed under the Clean Air Act on December 3, 1991, by three environmental groups asking that MB and other ozone depleting chemicals be removed from production and use immediately. Those three groups recently sued EPA to force a response to their earlier petition.

Energy and Commerce Committee Chairman John Dingell has reviewed EPA's handling of this matter and in two letters written since mid-October, he has sharply criticized pre-judgment of the matter by EPA staff. He is continuing an investigation in this area.

Further, the USDA has expressed serious concerns about the speed with which EPA has moved. A fairly large number of commodity groups have voiced opposition to premature action, in communications with Members of Congress and Administration officials.

V. Impacts of Regulation

Although, the specific economic, social, health and environmental impacts have not been quantified, they appear to be quite substantial. Categories include:

Nutrition. Unless feasible alternatives to MB are introduced and then approved by the government for use with the full range of commodities, the flow of basic foodstuffs will be affected, perhaps significantly in some regions and seasons. For example, most of the fresh fruit and vegetables available in winter months are imported and must, by statute, be fumigated.

Adequacy of food supplies in developing nations. For example, in several African nations farmers using MB now can produce enough food for local needs and are beginning to export. Loss of MB would be a significant blow to food production in these countries.

Environmental and health. According to industry sources, reforestation efforts would be as much as 30 percent less productive without MB. Also, the few potential chemical alternatives appear to pose a range of other, better defined environmental and health concerns.

For example, one possible limited use alternative, Telone II, has been suspended by the state of California because of suspected toxicological and groundwater contamination problems.

The economic impact of a loss of MB is being calculated by the USDA. Early indications are that it would affect a large portion of trade with South and Central America, Caribbean basin nations, Africa and Asia. For example, Japan requires that all imported timber (and even shipping pallets made of wood) be fumigated with MB before entry.

Especially in California, Florida and Texas, tens of thousands of seasonal farm-worker jobs would be affected almost immediately, and at least two key ports involved in agricultural trade -- Los Angeles and Philadelphia **--** would be negatively impacted.

VI. Policy Options

A. Immediately list MB as a Class I Controlled Substance under the Clean Air Act.

Given the negative ramifications of withdrawing MB and the considerable scientific uncertainties as to its likely ozone-depletion impacts, immediate action would not seem prudent.

B. List MB as a Class I Controlled Substance if the recent amendments to the Montreal Protocol are ratified by 20 nations including the U.S.

Current U.S. law requires listing. Removing MB on an accelerated basis does not seem warranted.

C. List MB as a Class I Controlled Substance but take no further action pending additional UNEP consideration.

D. Amend the Clean Air Act to allow greater flexibility when vital national interests are at stake.

Although all parties appear dissatisfied with the law as written, no one seems to have much taste for reopening legislation that required a decade to pass.

E. Immediately encourage stricter emission controls, additional scientific research to resolve unanswered issues about MB's ozone-depletion impacts, increased research into alternatives, and "fast-track" approval processes for new fumigants.

Given the difficult economic and policy trade-offs, this approach makes the greatest sense for the near term, particularly because additional research has the promise of significantly reducing the many current uncertainties about MB's role as an ozone depleter.