

METHYL BROMIDE CRITICAL USE RENOMINATION NOMINATION FOR STRUCTURES, COMMODITIES OR OBJECTS

NOMINATING PARTY: The United States of America

FILE NAME USA CUN11 POST HARVEST -- DRY, CURED PORK PRODUCTS

BRIEF DESCRIPTIVE TITLE OF NOMINATION:

Methyl Bromide Critical Use Nomination for Post Harvest Use on Dry Cured Pork Products (Submitted in 2009 for 2011 Use Season)

STRUCTURE, COMMODITY OR OBJECT TREATED:

This sector is for the production of cured meat products, such as country hams. These are produced primarily in the southern U.S. This sector has no known viable alternative currently available.

QUANTITY OF METHYL BROMIDE REQUESTED IN EACH YEAR OF NOMINATION:

TABLE 1: QUANTITY OF METHYL BROMIDE REQUESTED IN EACH YEAR OF NOMINATION

YEAR	NOMINATION AMOUNT
2011	3,730 kilograms

(Details on this page are requested under Decision Ex. I/4(7), for posting on the Ozone Secretariat website under Decision Ex. I/4(8).)

In assessing nominations submitted in this format, TEAP and MBTOC will also refer to the original nomination on which the Party's first-year exemption was approved, as well as any supplementary information provided by the Party in relation to that original nomination. As this earlier information is retained by MBTOC, a Party need not re-submit that earlier information.

NOMINATING PARTY CONTACT DETAILS:

Contact Person: Hodayah Finman
Title: Foreign Affairs Officer
Address: Office of Environmental Policy
U.S. Department of State
2201 C Street, N.W. Room 2658
Washington, D.C. 20520
U.S.A.
Telephone: (202) 647-1123
Fax: (202) 647-5947
E-mail: FinmanHH@state.gov

Following the requirements of Decision IX/6 paragraph (a)(1) United States of America has determined that the specific use detailed in this Critical Use Nomination is critical because the lack of availability of methyl bromide for this use would result in a significant market disruption. Yes No

METHYL BROMIDE CRITICAL USE RENOMINATION FOR PREPLANT SOIL USE (OPEN FIELD OR PROTECTED ENVIRONMENT)

DRY CURED PORK PRODUCTS

1. SUMMARY OF NEED FOR METHYL BROMIDE AS A CRITICAL USE

Currently there are no known viable alternatives to methyl bromide for the dried meat industry: heat would alter the product, and phosphine may not control mites, a major pest. Sulfuryl fluoride received federal registration and has been tested for efficacy against the mites and other pests of cured meat products. Although mortality of the red-legged ham beetle occurred at levels below maximum rates of sulfuryl fluoride, the same cannot be said for the ham mites (Phillips, et al., 2008). Control of the ham mites took three times the legal limits of sulfuryl fluoride (Phillips, et al., 2008). At the time of this nomination there are no known registered alternatives for use on hams in the U.S. that provide the same level of pest control as methyl bromide.

This industry is cooperating with university researchers to find technically and economically feasible alternatives to methyl bromide. In the meantime, this industry is using IPM techniques to manage their pest populations. All use sanitation to keep their curing facilities clean. Several companies have modified their buildings to make them more gas-tight. Some companies are eliminating grass, trees, and shrubs from their buildings and replacing it with gravel, as suggested by researchers last year. Many use pheromone traps; however, these traps only used for monitoring purposes at this time (Arthur and Phillips, 2003).

This industry currently has no known viable chemical alternative available. Although its IPM measures may have reduced the number of times fumigation is needed in some facilities, it has not eliminated the need for fumigation. Therefore, methyl bromide remains critical to this industry.

TABLE 2. NOMINATION AMOUNT

2011 Methyl Bromide Usage Newer Numerical Index (BUNNI) Transition Use Reduction Description Spreadsheet

SECTOR		HAM				
		Gwaltney of Smithfield	National Country Ham Association	Nahunta Pork Center	American Assoc. of Meat Processors	Sector Total / Average
Quantity Requested for 2010:	Amount (kgs)	726	709	91	2,939	4,465
Quantity Recommended by MBTOC/TEAP for 2010 :	Amount (kgs)	726	709	91	2,939	4,465
Quantity Approved by Parties for 2010:	Amount (kgs)	726	709	91	2,939	4,465
	Volume (1000 m ³)	55	43	5	147	250
	Rate	13	16	18	20	18
Transition from 2010 Baseline Adjusted Value	Percentage (%)	0%	0%	0%	0%	0%
Quantity Required for 2011 Nomination:	Amount (kgs)	726	709	91	2,204	3,730
	Volume (1000 m ³)	56	42	5	110	213
	Rate	13	17	18	20	18

2. SUMMARIZE WHY ALTERNATIVES ARE NOT FEASIBLE

This industry currently has no known viable chemical alternative available. Although its IPM measures may have reduced the number of times fumigation is needed, it has not eliminated the need for fumigation. Therefore, methyl bromide remains critical to this industry.

3. RESEARCH RESULTS SHOWING EFFICACY OF ALTERNATIVES

Researchers are investigating control of the arthropod pests on dry cured pork products. In the spring of 2007 a proposal was submitted to USDA CSREES Integrated Research, Education, and Extension Competitive Grants Program- Methyl Bromide Transitions by several meat scientists and an entomologist. This proposal was funded for the next three years.

There are several objectives to this multiple year research program: First is to determine the effectiveness of chemical controls (sulfuryl fluoride, phosphine, and methyl bromide) against all life stages of both mold mites (*Tyrophagus putrescentiae*) and red legged ham beetles (*Necrobia rufipes*). Second objective is to determine the effectiveness of carbon dioxide and ozone against all life stages of both mold mites and red legged ham beetles. The third objective is to test the effects of sulfuryl fluoride, phosphine and methyl bromide on the quality and safety of the dry cured hams. The fourth objective is to conduct an economic analysis of the alternatives demonstrated to be technically viable alternatives for methyl bromide in this industry.

The results of sulfuryl fluoride efficacy investigations on *Tyrophagous putrescentiae*, ham mite, and *Necrobia rufipes*, red-legged ham beetle, were presented at the 2008 MBAO Conference, in Orlando, Fl. The studies included eggs and a mixture of adults and nymphs of mites and eggs, large larvae, pupae and adults of beetles. The experiments were conducted for 48 hours at 23° C at various concentrations of sulfuryl fluoride. The investigators achieved 100% mortality of red-legged ham beetle adults and pupae at about 4.0 g/m³, 100% mortality of larvae at 5.7 g/m³. Eggs of red-legged ham beetles died at 24.0 g/m³ of sulfuryl fluoride, well below the maximum label rate. (Phillips, et al. 2008) Mortality of ham mites required higher concentrations of sulfuryl fluoride. A concentration of about 100.3 g/m³ was necessary to obtain 100% mortality of adults and nymphs under the test conditions. However this concentration obtained only a 95% mortality of mite eggs. This is about three times the legal label rate. (Phillips, et al. 2008)

4. REGISTRATION UPDATE

No new chemicals have been registered nor de-registered since the last nomination.

5. ECONOMIC INFEASIBILITY OF ALTERNATIVES

An economic analysis was not conducted because this sector has no technically feasible alternatives at this time.

CITATIONS

Arthur, F. and T. W. Phillips. 2003. Stored-product insect pest management and control, In: Food Plant Sanitation eds: Y. H. Hui, B. L. Bruinsma, J. R. Gorham, W. Nip, P. S. Tong, and P. Ventresca. Marcel Dekker, Inc., New York, pp. 341-358.

Phillips, Thomas W., Md. Mahbub Hasaan, M. Jamie Aikins, and M. Wes Schilling. 2008. Efficacy of sulfuryl fluoride to control ham mites and red-legged ham beetles. Presentation at MBAO, Orlando, Fl. November 12, 2008.