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MEMORANDUM

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SUBJECT: METHYL BROMIDE TOTALLY IMPERMEABLE FILM TARP MASS LOSS ESTIMATES

The Department of Pesticide Regulation's (DPR's) methyl bromide (MeBr) database has MeBr mass loss estimates from seven applications made under Totally Impermeable Film (TIF). These applications were conducted in three separate studies and each is a different combination of application method and TIF tarp. Thus, no summary beyond the presentation in Table 1 below is possible. None of the combinations are replicated.

Table 1. Total mass loss from Totally Impermeable Film (TIF) applications over various application methods.

Authors	Application Type	Location	Total Mass Loss (%)
Ajwa and Sullivan (2010a)	Bed	Ft. Pierce, FL	15.3
Ajwa and Sullivan (2010b)	Broadcast	Wasco, CA	45.5
Ajwa and Sullivan (2010b)	Broadcast + KTS ¹	Wasco, CA	22.1
Ajwa and Sullivan (2010b)	Broadcast/Deep	Wasco, CA	27.1
Ajwa and Sullivan (2010b)	Strip/Deep	Wasco, CA	41.8
Ajwa and Sullivan (2010c)	Bed/Drip + KTS ¹	Ventura, CA	26.8
Ajwa and Sullivan (2010a)	Hot Gas	Ft. Pierce, FL	33.4

¹ KTS = Potassium Thiosulfate



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The mass loss results are highly variable and do not follow expected trends. For example, the Strip/Deep mass loss is 41.8%, almost 3 times larger than the mass loss from the Bed application that was done with shallow injection. Although data analysis to date has not shown a statistically significant difference in flux or mass loss due to injection depth, if there was a difference it is expected that deep injection would show a smaller mass loss than shallow injection. Also unexpected is that the broadcast application method under TIF tarp has approximately the same total mass loss as standard polyethylene tarps (48%, Barry 2007). These observations suggest that before any changes to the MeBr Emission Ratings more data for mass loss of MeBr when applied under TIF tarp should be acquired.

References

Ajwa, H. and D. Sullivan. 2010a. Monitoring of methyl bromide and chloropicrin field emissions from shank applications (bedded and broadcast) and a methyl bromide hot-gas application under totally impermeable film. Sullivan Environmental Consulting, Inc. 1900 Elkin Street Suite 200, Alexandria, Virginia 22308. Laboratory Study ID HA201001. CDPR data volume 199-0140.

Ajwa, H. and D. Sullivan. 2010b. Monitoring of methyl bromide and chloropicrin field emissions from shank applications at shallow and deep injection depths. Sullivan Environmental Consulting, Inc. 1900 Elkin Street Suite 200, Alexandria, Virginia 22308. Laboratory Study ID HA200901. CDPR data volume 123-0220.

Ajwa, H. and D. Sullivan. 2010c. Monitoring of chloropicrin, 1,3-dichloropropene and methyl bromide from shank applications and drip fumigation EVAL-resin barrier films. Sullivan Environmental Consulting, Inc. 1900 Elkin Street Suite 200, Alexandria, Virginia 22308. Laboratory Study ID HA200902-2. CDPR data volume 199-0142.