

Economic Evaluation of Methyl  
Bromide Alternatives for  
Strawberry Production in  
Eastern North Carolina

- Cooperative effort between the Departments of Horticulture, Plant Pathology and Agricultural Economics
- Purpose: Evaluate the economic feasibility of various chemical alternatives that can be substituted for methyl bromide (MB) in strawberry production.
- Companion study focuses on tomatoes

# Methodology & Assumptions

- The base cost model was developed for a 5 acre strawberry planting using MB as the fumigant.
- Production practices were based on the management practices recommended by research & extension specialists and reviewed by growers.
- Input prices were obtained from local dealers who regularly supply NC strawberry producers.

# Methodology & Assumptions

- Machinery & equipment was purchased new at 2001 prices.
- Labor cost estimates reflected the true costs of labor and not just wage rates.
- 2/3's of the strawberries were sold through PYO operations @ \$0.90/lb and 1/3 were sold at a fruit stand @ \$1.40/lb.
- Partial budget analysis was used evaluate alternate fumigants relative to MB.

# Strawberry Cost Estimates

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Production Stage	Cost Estimate
Land Preparation	\$ 516
Pre-Plant Operations	4,399
Trans/Post-Plant Ops	2,035
Dormant Period	939
Pre-Harvest Operations	2,115
Harvest Operations	3,528
Total Cost Estimate	\$13,532

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# Partial Budgeting

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## Negative Effects:

Added Costs \$ \_\_\_\_\_

Reduced Returns \$ \_\_\_\_\_

Total Negative Effects \$ \_\_\_\_\_

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## Positive Effects:

Reduced Costs \$ \_\_\_\_\_

Added Returns \$ \_\_\_\_\_

Total Positive Effects \$ \_\_\_\_\_

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**Total Effects (+/-) Returns** \$ \_\_\_\_\_

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# Estimated Fumigation Costs per Acre

Fumigant	Total Costs	Reduced Costs
<b>Methyl Bromide</b>	<b>\$1,267</b>	<b>\$ 0</b>
Metam Sodium (Shank)	\$1,196	\$ 71
Chloropicrin	\$1,175	\$ 92
Telone-C35	\$1,107	\$160
InLine (drip)	\$1,059	\$208
Telone II	\$ 988	\$279
Metam Sodium (drip)	\$ 904	\$363
Non-fumigated (check)	\$ 767	\$500

# Estimated Average Yields per Acre

Fumigant	Avg. Yld.	Years
Chloropicrin	28,377 lbs	2000 - 01
Telone-C35	26,806 lbs	1996 - 01
<b>Methyl Bromide</b>	<b>26,673 lbs</b>	<b>1996 - 01</b>
Metam Sodium (Shank)	26,604 lbs	1996 - 01
InLine (drip)	24,193 lbs	2000 - 01
Metam Sodium (drip)	24,103 lbs	2000 - 01
Telone II	22,253 lbs	2000 - 01
Non-fumigated (check)	20,010 lbs	1996 - 01

# Estimated Returns per Acre

Fumigant	Additional Returns	Net Returns
Chloropicrin	\$1,768	\$16,687
Telone-C35	\$291	\$15,210
Metam Sodium (Shank)	\$3	\$14,922
<b>Methyl Bromide</b>	<b>\$0</b>	<b>\$14,919</b>
Metam Sodium (drip)	-\$2,164	\$12,755
InLine (drip)	-\$2,230	\$12,689
Telone II	-\$4,167	\$10,752
Non-fumigated (check)	-\$6,052	\$ 8,867

# Conclusions:

- There are economically feasible alternatives to MB in strawberry production in the southeastern U.S. Technical issues may remain.
- Chloropicrin showed the “best” potential for growing conditions in eastern N.C. relative to MB (\$1,768/A).
- Telone C35 showed a modest improvement relative to MB (\$291/A) under low pressure conditions.
- Shank-applied Metam Sodium showed virtually the same total effects as MB (\$3/A).

# Contacts:

- Charles D. Safley:  
[charles\\_safley@ncsu.edu](mailto:charles_safley@ncsu.edu)  
Phone: 919-515-4538
- E. Barclay Poling  
[barclay\\_poling@ncsu.edu](mailto:barclay_poling@ncsu.edu)  
Phone: 919-515-1195
- Frank J. Louws  
[frank\\_louws@ncsu.edu](mailto:frank_louws@ncsu.edu)  
Phone: 919-515-6689