



RECOMMENDATIONS FOR FORMULATIONS OF
PHOSPHAMIDON FOR SPRUCE BUDWORM CONTROL

QUEBEC, 1977

by

W. W. Hopewell

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Chemical Control Research Institute

Environment Canada

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Research Institute, Canadian Forestry Ser-
vice, Environment Canada, 25 Pickering
Place, Ottawa, Ontario K1A 0W3, Canada.*

REPORT ON RECOMMENDATIONS FOR FORMULATIONS OF *PHOSPHAMIDON* FOR USE
IN OPERATIONAL AERIAL SPRAY CONTROL OF SPRUCE BUDWORM IN QUEBEC, 1977

Ref. File Report No. 73

Phosphamidon was to be applied at one dosage only, i.e., 2 oz AI/12 fl. oz (US)/acre. As with fenitrothion, this work was done under pressure of a time deadline and no viscosity measurements were done at the time; the viscosity reported here was determined later from a sample of the recommended formulation. Stability of the test formulations was determined by centrifuging as described in File Report 7² for fenitrothion.

Calculation of Volume Percents Required

Require 2 oz AI/12 fl. oz (US)

56.7 g/355.2 ml = 15.96% active ingredient (wt/vol)

Density phosphamidon - 1.21 g/ml

Purity -- 92%

Therefore need $15.96 \times \frac{1}{1.21} \times \frac{1}{0.92} = 14.3\%$ (vol/vol)

However, the 1976 Quebec formulation contained 15% by volume which is equivalent to 2 oz/11.47 fl. oz (US) and this was the concentration used in the initial testing.

RESULTS

Preliminary tests showed phosphamidon was not soluble to any great extent in solvent R-11. However, it is miscible with Arotex in

all portions. The following were prepared and tested;

			g/ml		
			Orig.	Centrifuged	
				Top	Bottom
		Vol. %			
P-1 (1976 Quebec Formulation)	Phosphamidon	15			
	R-11	53			
	F.O. 2	6	0.945	0.908	1.019
	F.O. 4	26		-3.9%	+7.8%
P-2	Phosphamidon	15			
	R-11	7.5			
	Arotex	7.5			
	F.O. 2	30	0.958	0.922	1.029
	F.O. 4	40		-3.8%	+7.4%
P-3	Phosphamidon	15			
	Arotex	53			
	F.O. 2	6	0.9789	0.9786	0.9789
	F.O. 4	26		0	0
P-4	Phosphamidon	15			
	Arotex	30			
	F.O. 2	15	0.9702	0.9480	1.0186
	F.O. 4	40		-2.3%	+5.0%
P-5	Phosphamidon	15	0.892	0.9682	1.0155
	Arotex	40		-1.4%	+3.4%
	F.O. 4	45	Separation mark at 1 ml (10%)		
P-6	Phosphamidon	14.3	0.9792	0.9748	0.9964
	Arotex	43.7		-0.45%	+1.75%
	F.O. 4	42.0	Sep. 0.6 ml		
P-7	Phosphamidon	15			
	Arotex	40	0.974	0.9628	1.007
	F.O. 2	15		-1.15%	+3.3%
	F.O. 4	30	Sep. 0.8 ml		
P-8	Phosphamidon	15			
	Arotex	50	0.9775	0.9776	0.9774
	F.O. 2	5		0	0
	F.O. 4	30	No separation mark		
P-9	Phosphamidon	14.3			
	Arotex	47.7			
	F.O. 2	7	0.9768	0.9635	0.9785
	F.O. 4	32		-1.4%	+0.2%

		<u>Vol. %</u>	<u>g/ml</u>		
			<u>Centrifuged</u>		
			<u>Orig.</u>	<u>Top</u>	<u>Bottom</u>
P-10	Phosphamidon	14.3			
	Arotex	50.0			
	F.O. 2	3.7	0.9798	0.9792	0.9796
	F.O. 4	32.0		0	0

Mix P-10 was the formulation recommended. Ref. Telex 1-03-77. Viscosity - 5.6.