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UNITED STATES ENVIRONMENTAL PROTECTION AGENCY
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SUBJECT: Carbaryl: RPAR Status and Use on Tussock Moth

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While the review process is not entirely complete, I think the following is consistent with the opinions of the Working Group regarding the status of the triggers. The calculations are my own.

Oncogenicity: There are no studies that have been judged as positive. This is not to conclude that they are necessarily adequate to demonstrate safety but that a "trigger" is unlikely.

Teratogenicity: A definite problem exists. Estimating an "ample margin of safety" requires a NEL and an estimate of exposure that can "reasonably be anticipated." Assuming the worst case NEL for the dog is about 4 mg/kg, the equivalent dose for a small human female of 50 kg is 200 mg. A forest treatment at 1 lb/acre produces 10 mg/sq. ft., the majority of which should hang up in a closed canopy. Assuming 2 mg/sq. ft. reaches the ground and lands on 2 sq. ft of exposed skin and 10% is absorbed, this provides a dose of 0.4 mg. The margin of safety is $200/0.4 = 500$.

I suggest the opinion of the Toxicology Branch be solicited on the "adequate margin of safety" and the reasonableness of the exposure estimate.

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Non-target organisms: I have not reviewed the proposal to use carbaryl to control tussock moth and cannot comment on the anticipated benefits. The question of **ecosystem-level** impacts from forest treatments is a subject the Agency should ultimately address.

A further consideration in permitting this use is the assumption that the treated area is forest, essentially occupied by a very low density of humans. I would recommend at this time that an attempt be made to avoid treating permanent camp grounds and any other local areas of high human density. Ground treatments in such situation would be more appropriate.

I assume this use is being monitored and that the results will enable the Agency to better judge exposure. If factors such as the average concentration reaching the ground level are already known and deviate substantially from my guess work, this should be taken into consideration.