COTTONWOOD: Populus deltoides Bartr. L. Newsome and J. D. Solomon, Southern Forest (278) and 0.7 to 1.2 m (2-4 ft) tall. Ten aphid-infested trees were selected at random for each treatment and untreated check. Foliar applications were made using a 7.6 litre (2 gal) hand sprayer calibrated at 1.4 kg pressure/cm² (20 lb/in²) to deliver 102.9 litre finished spray per hectare (11 gal/acre). Prespray counts were made of all living aphids on three randomly selected leaves in the upper half of each of the 10 trees in each treatment.

Check 188.0 257.8 0.0
A. Montana (1979) prespray 38? 597 232 17*5 213 49.98 a 41.32 a 45.00 a 35.13 a 89.90 a 53.59 a 20.00 a 15.27 a 17.05 a 15.52 a 58.29 a 30.73 a

Mean % population reduction 49.18 a 41.32 a 45.00 a 45.15 a 89.90 a 83.59 a

Douglas-fir: Pseudotsuga menziesii var. glauca (Beissn.) France

GRAND-FIR: Abies grandis (Doug I.) Lindl. U. S. Forest Service, 2810 Chiles Road

WESTERN SPRUCE BUDWORM AERIAL APPLICATION WITH SIR 8514, 1979-1980: SIR 8514 0.25 WP was applied to a Douglas-fir stand by helicopter, at a dosage rate of 2 oz ai/acre, against 5th and 6th stage larvae of the western spruce budworm, in central Montana, July 2, 1979. The same insecticide was applied by helicopter to grand-fir against 4th and 5th stage larvae of western spruce budworm near Donnelly, Idaho, Jun 22, 1980, but at a dosage rate of 4 oz ai/acre. For both applications, SIR 8514 was mixed with water for a total volume of 1 gal/acre and applied with 8002 flat fan nozzle tips, at 45 mph, 50 ft above tree tops. Each year, tests were limited to a single dosage rate applied to three plots with 5 additional plots (1979), and 3 additional plots (1980), serving as checks. Spray plots were 50 acres in size and at 5500-6000 ft elevation in Montana and 5500-6200 ft elevation in Idaho. Each plot contained 15 sample trees. Populations were expressed as mean number of larvae/100 buds; population estimates were determined 24 hr prespray, and 5, 10, 15, and 20 days postspray in Montana and 4 intervals postspray in Idaho. Significant differences were detected 20 days postspray for population estimates, i.e., number of larvae/100 buds. When these numbers were converted to a percent population reduction, however, differences were not detectable. Larvae from treated and check plots were reared in the laboratory and observed for successful pupation and adult emergence. Significant differences were detected (both years) when prespray and 15-day success ratios were compared, but because these differences were observed in both treated and check plot rearings, they cannot be attributed to treatment.

Site, date and collection interval

Mean % developmental success

*Means in the same column followed by the same letter do not differ significantly at the 5% level (one-way Anova).