CALPHOS STIMULATES GROWTH OF NEWLY PLANTED LOBLOLLY PINES[1]

M. Victor Bilan[2]

Procedure

One-year-old loblolly pine seedlings were bar-planted in furrowed and unfurrowed rows in an open field in eastern Texas. Three or 6 ounces of calphos were placed in planting holes. One week after planting, 1 ounce of 60 percent muriate of potash and 1.5 ounces of 40 percent ammonium sulphate were spread on the soil surface in a 12-inch radius around each seedling. Unfertilized seedlings, planted in the furrowed and unfurrowed rows, served as controls.

Results

Survival of the seedlings was high in all treatments (table 1), but it was consistently higher in fertilized rows than in control rows.

Height growth of calphos-treated seedlings was significantly greater than that of control

TABLE 1.--Average percentage of seedling survival[1]

Treatment	Unfurrowed				Furrowed			
	1961	1962	1963	1964	1961	1962	1963	1964
	Pct.	*Pct.*	*Pct.*	*Pct.*	*Pct.*	*Pct.*	*Pct.*	*Pct.*
Control.................	93	89	89	89	97	97	96	96
3 oz. calphos...........	94	94	94	92	100	100	100	100
6 oz. calphos...........	99	98	98	97	100	100	100	98

[1] Each average is based on 100 observations.

[1] This paper reports the results of a cooperative study between the School of Forestry, Stephen F. Austin State College, Nacogdoches, Tex., and Thompson Sales Company, Inc., Montgomery, Ala.

[2] Associate Professor of Forestry, Stephen F. Austin State College, Nacogdoches, Tex.

TABLE 2.--Average height of experimental seedli
treatments

Treatment	Unfurrowed		
	1961	1962	1963
	In.	*In.*	*In.*
Control................	17	43	84
3 oz. calphos..........	18	45	88
6 oz. calphos..........	19	47	91

seedlings. This superior growth of fertilized pines began during the first growing season after planting and was still evident in the last remeasurement 4 years after treatments (table 2).

Average breast-height diameter 4 years after planting was also greater in calphos fertilized pines than in unfertilized pines (table 3).

TABLE 3.--Average breast-height diameter per seedling by treatments 4 years after planting (1964)

Treatment	Unfurrowed	Furrowed
	In.	*In.*
Control.........	1.55	1.60
3 oz. calphos...	1.73	1.73
6 oz. calphos...	1.72	1.70

Seedlings infested by tip moths during the first and second growing seasons after planting were counted. Correlation of the infestation with any of the treatments was not evident.

Conclusions

This study demonstrated that calphos can be safely placed in the planting holes and, when combined with a proper application of potash and nitrogen, can significantly increase growth of planted loblolly pines for at least the first few years after application.