hay or straw with another piece of machinery, and then tacking the mulch to the ground with sometimes a third piece of machinery.

Hydro-mulching, sometimes referred to as low-profile mulch, is a recent technological development in which the seed, fertilizer, and mulch are applied in a one-step process. Hydro-mulching has experienced significant success in the more humid eastern United States. The differences in the effects of the two mulches are simply that the higher-profile straw mulch is a more effective insulator and it helps retain moisture better. R.E. Blaser found that straw mulch tacked with wood fiber could possibly be the best treatment for a late fall planting, thus expecting the emergence of seedlings the following spring. If this procedure is adopted, it may well be that a new piece of equipment will evolve that combines the use of straw-mulching with hydro-mulching.

Other research has been done on the use of poly foams to simulate the high-profile effect of straw with possible use of the hydro-mulch machine. A significant advance is predicted in the near future to develop a machine that will pump a thicker slurry of wood fiber in the conventional hydro-mulching process. If the ratio of water to wood fiber can be reduced in the process, then the economics of hydro-mulching will be improved for a significant labor savings.

One piece of machinery likely to develop in the future is a machine combining high-profile and low-profile mulch. A second piece of machinery possible in the future will be some type of foam mulch dispenser. The futuristic machine we will all see in the next few years is a hydro-mulch capable of pumping more fiber per gallon of water.

WICK APPLICATORS

Wayne W. Huffine

Several wick applicators are commercially available; however, Oklahoma uses BoBar rope applicator for roadside weed control investigations. It is designed for use on rights-of-way, including irregular terrains. We have worked with two BoBar wick applicators--one, an experimental unit about 6.5 ft wide mounted on the front of a pick-up truck, and the other, a three-unit BoBar Compensating Feed Rope Applicator that uses the tractor's existing hydraulic system and control valve. With both wings fully extended, it will effectively treat an area 14 ft wide.

One of the unique features of this kind of applicator is the ability to control high-growing weed species, such as Johnsongrass, while permitting low-growing erosion-resistant vegetation, such as Bermuda grass, to remain. Johnsongrass can effectively be controlled by using an appropriate herbicide with this machinery. For best results, the herbicide should be applied to actively growing plants when most have reached the boot to head stage of growth. The wick applicators are designed to apply herbicide to the stem and underside of leaves and undesirable plants. The advantages of the applicator are (a) it can be used in wind, (b) it can be used adjacent to water and desired plant life, and (c) it is generally considered efficient and economical. Some of the disadvantages are (a) the transport vehicle is limited to rather smooth surfaces, (b) the ropes must be kept clean, and (c) when stored for considerable time, the ropes must be kept out of bright light.

The front-mounted unit, weighing about 800 lb, tends to make the tractor front heavy with a loss of traction in some situations, such as when the front-mounted unit is operated straight down from the face of a rather steep slope, and it becomes necessary to back up to turn around. The addition of weights to the rear wheels can generally remedy this situation.

The following table and other data represent a sample of the program evaluation of herbicides and speeds of application for the control of alfalfa on roadsides with a compensating feed rope applicator: date treated--July 2, 1980; date scored--July 15, 1980; plot size, 32 ft x 100 ft; replications, 3; herbicide dilution, 2 parts water to 1 part herbicide; method of scoring, 10 = complete control and 1 = no effect.

Expt. 4-H-7-80
Treatments

Herbicide	Speed of Application (mph)	Alfalfa Control Score
1. Roundup (3 lb ae/gal)	3	2.0
2. Roundup (3 lb ae/gal)	4	2.3
3. Roundup (3 lb ae/gal)	5	2.0
4. Weedmaster (1 lb ai dicamba plus 3 lb 2,4-D/gal)	3	6.0
5. Weedmaster (4 lb ai/gal)	4	5.7
6. Weedmaster (4 lb ai/gal)	5	5.3
7. 2,4-D (4 lb ai/gal)	3	1.7
8. 2,4-D (4 lb ai/gal)	4	2.0
9. 2,4-D (4 lb ai/gal)	5	1.7
10. Banvel (4 lb ai/gal)	3	5.0
11. Banvel (4 lb ai/gal)	4	5.0
12. Banvel (4 lb ai/gal)	5	4.3
13. Check	-	1.0
Significant differences		**
CV		13%
LSD.01		1.11

MOVING TREES MECHANICALLY

George Wassenaar

(Wassenaar's presentation was not available for publication.)

EQUIPMENT TO IMPROVE HERBICIDE APPLICATION EFFICIENCY

John Kubacak

Cibolo Manufacturing has developed a one-man operated herbicide sprayer called the Swinglok^{tm}. It is ideal for use by state highway departments, cities, and counties. It is capable of such diverse spraying operations as applying bareground herbicides under guardrails, signs on shoulders, selective treatments in the right-of-way, and foliage. The system attaches to the front bumper of the vehicle and incorporates special design booms for versatility and flexibility. This system allows for selective spraying up to 36 ft in the right-of-way. The spray swath consists of four 9-ft sections, each of which can be operated independently or in any combination by the flip of a switch on the dash-