Dual/Princep where various ornamentals represent the roadside landscaping.

Also, Ciba-Geigy is testing a new compound identified as CGA-82725, which is a postemergence grass control herbicide. The complete activity of this compound has not been reported to date.

A registration for a Tandex/Princep mixture is currently being planned. This combination will offer a potential for either selective control of annual weeds, or complete vegetation control, depending on rates applied. Ciba-Geigy is striving to find new and better compounds for use as well as to determine new uses for old compounds to better service the roadside vegetation management programs in the United States.

FUTURE IN CHEMICAL ROADSIDE VEGETATION MANAGEMENT

Stephen R. Muench

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

FUTURE IN CHEMICAL ROADSIDE VEGETATION MANAGEMENT

M.R. Jones

Chevron Chemical Company has two herbicides that can be used for right-of-way maintenance--Ortho Paraquat CL and Ortho Diquat 2 spray. Ortho Paraquat CL is a restricted herbicide; it can be applied only by licensed applicators. It is a contact herbicide with a quick burndown or disiccation on grasses and weeds. Sometime ago we made available a reference book on Paraquat Toxicology and Poisoning. This listed treatment procedures, methodology, and information on Paraquat.

Ortho Diquat 2 spray has been labeled for right-of-way, highway, and other areas that have unwanted weeds and grasses. It is also a contact herbicide and it is a nonrestricted product. It is compatible with many residual herbicides to help develop a complete maintenance program. Both terrestrial and aquatic species are listed on the label that makes the product a dual-purpose contact herbicide. Diquat 2 spray has an LD 50 of 440. It carries a warning statement on the label.

Ortho X-77 spreader is a non-lonic surfactant that is recommended for use with both Ortho Paraquat CL and Ortho Diquat 2 spray. It is necessary to add a non-lonic surfactant to obtain the best results with either of these products. This aids in wetting both weed and grass species and helps inhibit foaming.

FUTURE IN CHEMICAL ROADSIDE VEGETATION MANAGEMENT

John W. Matteson

Embark^{R} 2-S Plant Growth Regulator (PGR) is a versatile, newly developed product from 3M designed to reduce the cost of grass maintenance in locations such as highway rights-of-way, airports, golf courses, and cemeteries. Embark 2-S PGR is formulated as a diethanolamine salt solution containing the equivalent of 2 lb active ingredient/gal. Toxicological studies show that, when used according to label recommendations, Embark PGR presents no hazard to the user or the environment.

Embark PGR may be tank mixed with 2,4-D for total vegetation management. Research has shown that no incompatibility exists when Embark PGR is tank mixed with Dicamba, MCPP, and other broadleaf weed control herbicides. Embark PGR will reduce or eliminate mowing requirements for a minimum of 5 weeks on Bermuda grass and a minimum of 8 weeks on cool-season grasses such as Kentucky bluegrass, tall fescue, chewings fescue, red fescue, and several other species. Year-long seedhead suppression can be attained on cool-season species by making spring applications before the seedhead develops. Fall applications give spring vegetative growth suppression and seedhead control on many cool-season species. Mowing may be made before or after application or not at all. The important thing to remember is that the grass must be actively growing and healthy and not cut too short to get sufficient absorption of the chemical.

Any spray equipment that will apply 15-150 gal/acre of spray solution and give uniform coverage can be used for Embark PGR application. The quality of application is more dependent of the equipment operators than of the equipment itself. During its 2 years on the market, Embark has shown many states and municipalities that its use will reduce the labor assigned to mowing, thus allowing more flexible use of manpower and equipment, will reduce mowing risks, and fits in well with total vegetation management.

3M is continuing its research with Embark PGR to increase its utility in vegetation management. Other chemicals from the 3M research laboratories, such as MBR 18337, are showing promise as turf management tools of the future.

HERBICIDE SPRAY EQUIPMENT

J.M. Custer

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

HYDRO-SEEDING AND MULCHING MACHINERY

Bob Jones

Establishment of vegetation of roadsides falls into two basic categories: the planting of living plants and the planting of seeds. One of the critical factors of successful planting is that of providing adequate moisture. The cost of irrigation made it necessary to seek ways to take better advantage of rainfall. Man learned centuries ago that a covering, such as rocks, leaves, or twigs, would help protect the new vegetation. Moisture was better retained in the soil, soil temperatures were moderated, and the plants were protected from erosion. In some cases a planting has been successful when under normal conditions it might not have been. In some cases, the reverse is true. The agricultural community has dealt with this less than 100 percent probability of success from the beginning of time.

Straw or hay mulching (high-profile mulch) has proved to be the most successful technique in the arid climates of the West. The process involves the planting of seed and fertilizer in the soil with one piece of machinery, then mulching with a layer of