if all of the nitrogen is applied initially in a single application at three to four pounds N per 1,000 square feet. At one pound N per 1,000 square feet per month, the hydralization rate was not adequate to provide high-quality turf. The reduced microbial activity during the cool winter periods is responsible for poor response to the sewage sludge and urea-formaldehyde materials.

An alternative approach to annual overseeding of dormant bermudagrass in the transition zone areas would be the management of permanent warm- and cool-season turf swards. Compatibility of turfgrasses for use in integrated swards is dependent on physiological as well as morphological characteristics. Compatibility requires the uniform mixing of the two grasses so as to avoid the dense colonization of grasses in isolates within the sward. Segregation of turf stands in isolates results in serious reduction in turf quality in the transition between the successive spring, summer, fall and winter seasons. Common bermudagrass and Kentucky bluegrass have shown the greatest potential for use in the integrated stands of warm- and cool-season grasses. Management is the key to maintaining the delicate balance in these mixed stands.

STUDIES WITH mixed stands of common bermudagrass and Kentucky bluegrass showed that mowing at ¾ inch resulted in an increased bermudagrass population with a general reduction in turf quality when compared with the 1½-inch height. The source and timing of nitrogen fertilizer applications had a distinct influence on grass composition and quality of the turf sward. Acceptable turf quality can be maintained on mixed stands of common bermudagrass and Kentucky bluegrass in the transition zone areas by using readily available nitrogen sources and fertilizing primarily during the cooler portions of the year. The key to success is dependent on maintaining a strong bluegrass population. Fertility programs that increase bermudagrass competition result in reduced turf quality, particularly during the critical winter months. The higher height of cut and the use of periodical vertical mowing to thin bermudagrass in the late summer strengthens bluegrass populations and increases general turfgrass quality.

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MAINTENANCE Aids

A TIP FROM

GREG WOJICK, Golf Course Superintendent,
Willimantic Country Club, Willimantic, Connecticut

SUPERINTENDENT Greg Wojick welded a seat and a footrest on the spreader shown. The purpose is twofold: First, it provides additional worker comfort and stability, and secondly, it allows the worker attending the topdressing flow more freedom of movement. This unit, drawn by a truckster, makes several passes and turns during topdressing operations on putting greens. With the seat, the worker has freedom of both hands and a stability not before possible standing on the bar while the unit moves and turns.