

Towable topdressers continue to evolve

Editor's note: This article was written by Bruce Carmichael of TrynEx International.



startup and shutdown, some manufacturers have developed an automatic procedure for when the unit is turned on and off. When all topdresser components are shut off at the same time, a buildup of material is typically left on the spinner. Then, when the unit is started, the operator experiences a sudden rush of material that leaves a clump of sand on the ground. To prevent this, some machines will automatically power up the spinners before the feed system starts, and then shut the spin-

Not only has the industry seen advancements in feed designs, but the drive systems that power them have also improved. Because of these changes, the environmental issues associated with traditional topdressers have been diminished.

» **HOPPERS** constructed of polyethylene help reduce the physical footprint of topdressers.

As sports turf managers adapt to new turfgrass recommendations, equipment manufacturers incorporate new technology in their latest designs of small, towable topdressers.

Topdressing has been evolving since the early days of golf. What began as a generous application of sand, which was applied only a couple times each year, has developed into a process that is practiced much more frequently with a very precise amount of material.

The United States Golf Association has been recommending lighter applications of topdressing material, and some superintendents are spreading sand at only 1/32 of an inch. To maintain such a light depth in a uniform application, a topdresser's feed system, gate, spinner

and controller all must work together to achieve results that are on target with individual needs.

Manufacturers have developed auger systems that feed a more accurate amount of material onto a precise spot on the spinner. With the help of a digital readout, the operator is able to see exactly how many pounds of material he is spreading per minute according to his auger speed setting. This technology can handle materials other than just pure sand. Since the auger diameter used in these units is typically 3-7 inches, they don't have the capacity to deliver as much material as large conveyors.

LESS WASTE

Material waste is another important consideration in many new designs. Again, auger feeds should be more efficient than conveyors. But in order to reduce material waste upon

ners off a few seconds after the material flow stops.

New spinner enhancements have been developed to help accommodate personal preferences, including tiltable spinners, which help control how material is propelled into the turf canopy. Some designs incorporate spinners with adjustable paddles for further fine-tuning the spread pattern.

Even the gate plays an important part in the feeding process. It helps regulate material flow, and in some topdressers it can be electronically actuated from the seat of the towing vehicle. The positive locking feature on these electronic units is especially handy for quickly closing and opening the gate when moving from one green to the next. This prevents material from bouncing out during transport.

Regardless of the feed system used, any topdresser can be inhibited by material that lumps together, especially wet sand so now

many units now contain vibrators to eliminate the problem.

Finally, to manage all of these components, controllers have become more sophisticated. New technology allows the operator can mount electronic controls in the towing vehicle and manage each of the components independently from the cab.

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Until recently, most topdressers have been driven by an independent hydraulic system, but just as in every other industry, the big push to go green has changed the way turf managers think about purchasing equipment. They're beginning to favor self-contained equipment or avoiding hydraulic systems altogether in order to help prevent the spill of hydraulic oil. Electric motors can eliminate spills, lower gas consumption, reduce emissions and operate quieter.

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HOW HEAVY?

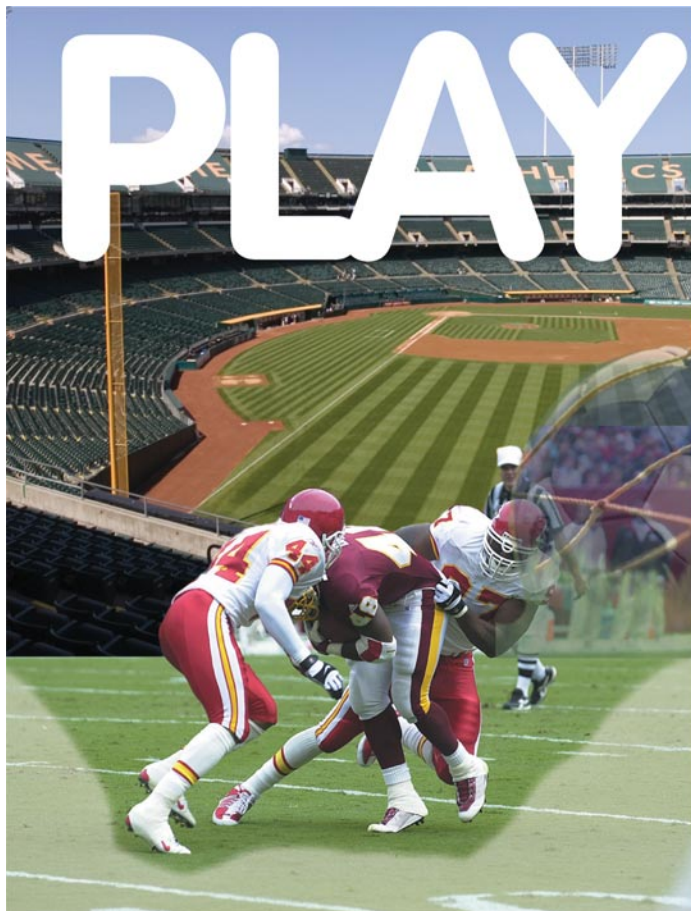
Manufacturers have taken strides in reducing the physical footprint. This is largely done by two methods: increasing the surface area of the machine's contact with the ground and, reducing the overall weight of the unit.

To spread out a machine's weight over a larger surface area, all topdressers use a similar type of wide turf tire. However, the biggest breakthroughs in reducing a physical footprint come in the weight reduction techniques by manufacturers. Obviously, the weight of material in the hopper cannot be reduced, but lightweight drive systems and hopper designs can make a huge impact in weight reduction without leaving an impact in the ground.

Hydraulic fluid alone can contribute more than 75 pounds to the machine. And if the

hydraulic system is powered by a separate gas engine, significantly more weight is added. Some manufacturers have eliminated the engine weight by designing their machines to hook up to the towing vehicle's central hydraulic unit, but even more, new models have replaced all hydraulic components with a lighter electric motor. By using the central hydraulic unit of the towing machine, they reduce the number of hydraulic components to maintain. And, by going to a completely electric-powered unit, they virtually eliminate the need for service on the drive system altogether.

Also, some turf managers are beginning to take advantage of lightweight hopper designs. They're looking beyond steel to new materials like polyethylene, which don't corrode. ■



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