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February 2003

Renaldo Cultivates Propane-Fired Ag Equipment

Automatic Transplanter Could Take Ag Industry to New Level of Efficiency

Farming is one of the most back-breaking industries, literally. Farmers and their employees face long, tough, physical days. And row crops can be one of the toughest, both physically and economically. Numerous tools and pieces of equipment have been modified and invented to ease the backbreaking work and make it more efficient—many using propane, such as weed flamers.

One of the newest pieces of farm equipment using propane is the RTMA Automatic Transplanter from Renaldo Sales & Service Inc. (North Collins, N.Y.).

A family business, Renaldo got its start in farming, first as a grower, then as a custom fabricator of ag equipment. In addition to manufacturing some equipment for the ag and propane industries and operating a propane retail unit based in North Collins, it also sells a variety of equipment for both industries.

According to the company's director of marketing, James K. Renaldo, RTMA is the first fully automatic transplanter. It burns holes in the plastic "mulch" that covers the raised rows of crops in the field, then inserts the plant (to a specific depth) from the tray, and gently packs it into the ground. The plastic mulch reduces the need for weeding and watering, but an opening needs to be cut or burned to insert seeds or plants. Burning, Renaldo explained, is preferred because the edge of the opening is smoother and is a bit stronger after the burn. Cutting can reduce the plastic mulch "shelf life" and often results in a sharper edge that can cut the tender seedling.

The company has been field-testing the RTMA at two farms in Florida since September 2002. Renaldo described the 2002 testing program on about 200 acres planted with tomatoes and peppers as successful.

Renaldo designed the transplanter after a customer said he would like a more efficient machine to plant seeds. The idea became the GVB520 Pneumatic Seed Planter, which can insert a seed every half-second, either through plastic mulch (using propane to burn the hole) or directly into bare ground.

The RTMA transplanter was ready for commercial testing after two years of development, including designing a seedling tray to be used specifically with the equipment. It also utilizes a torch to burn the hole and then an indexing system moves the seedling into position for planting. It was designed to burn a hole in three rows, in various sizes set by the farmer, in the mulch. The company estimates a farmer could cover about 20 acres, burning holes, before needing to refill a 100-lb tank.

Renaldo only designed the transplanter, which is attached to a tractor. Unfortunately, the company says most of its customers use diesel or gasoline tractors, mainly because of cost and efficiency issues.

Renaldo designed the "Air Prune" seedling tray specifically for the transplanter. The tray uses a plastic screen design for the removable bottom, which comes off during the planting process. The seedling is then removed from the bottom.

With some of the smallest margins of any business, farmers are always looking for the least expensive, most efficient way to conduct business. The RTMA, which should be available commercially in the spring, is designed for produce crops and is suitable for larger farm operations. Renaldo estimates a farmer needs at least 200 acres to justify the investment, but the payback is big—the RTMA is capable of planting at least 15,000 seedlings per hour in its three-row configuration.

—Ann Rey

Renaldo's RTMA automatic transplanter uses propane to burn a hole in the plastic mulch that covers row crops (top left) to transplant seedlings or plant seeds.