

A Little Bit of LPG Simplifies Tedious Job of Planting Seedlings

A propane-powered seed transplanter has been designed to work well with plastic mulch and can automatically place seedlings into the earth at rates of 3600-5000 plants per hour.

With an eye toward anticipated strong demand in the key agricultural areas of California, Renaldo Sales & Service, Inc. (North Collins, N.Y.), is gearing up to establish about 10 nationwide dealerships for the marketing of its model RTM-1100 semi-automatic transplanter. This unusual-looking device is connected via three-point hitch to a tractor, from which the farmer can efficiently transplant seedlings. (A slightly different version can be utilized to sow seeds.) The task is made possible with a small amount of propane.

This is the way the machine works: An individual sitting behind the planter places seedlings in a rotating carousel, which drops them into an injection cup. First it penetrates the ground, then opens in a clam-like manner, releases the seedlings, and returns to repeat the cycle. Two packer wheels tamp down the dirt.

Just prior to planting, a round "bullet" burner, which was developed by Renaldo, touches the sheet of plastic mulch. The burner has a round steel cone-like head that becomes red hot; immediately upon contact with the head, the plastic melts away. The heat continuously burns round holes for each plant.

The machine automatically places seedlings into the earth at a constant fixed depth at rates of 3600-5000 plants per hour. It moves at a speed of less than a half-mile-per-hour. The main advantage of the operation is that it is consistent and superior to manual planting, which sometimes skips. The total heat output of the propane-powered burner is approximately 100,000 Btu, depending on the pressure at which the regulator has been set.

According to Jim Renaldo Sr., the concept of using technology such as this for planting seeds or transplanting seedlings has been around for at least a decade. He said that a similar device had been used in Homestead, Fla.; however, in that application LPG was



WITH THE GROWING SEASON at hand, a model RTM-1000 semi-automatic seed transplanter from Renaldo has been readied for work in upstate New York.

combined with oxygen to yield a much greater volume of heat.

"That became very expensive," Renaldo remarked, "because you had to have two tanks plus a mixing device. Later we developed a propane burner that did the same thing at much less cost while consuming much less fuel." He said that the average consumption is about 4 gal. every eight hours. With the regular use of two burners per transplanter, a 20-week growing period (800 hrs of planting) would entail the consumption of approximately 400 gal. of fuel.

Some of the larger growers in the Florida area are said to possess as many as five planters each.

They generally mount a 100-lb cylinder on the side of the tractor to fuel the operation.

An operator can overcome the effects of rainwater and moisture on raised planting beds while increasing the consumption of fuel by adjusting the pressure to yield a faster recovery. Ordinarily, it is set at about 20 psi.

While the general concept behind

the transplanter is not new and the machine has enjoyed widespread use in the South for more than a decade, the technology is still relatively new to California and the Northeast, according to Renaldo.

In order to convey the idea of transplanting seedlings through plastic mulch to the region's agricultural experts, W.D. Henry Farms, a fresh vegetable grower, recently hosted an all-day field day for the local farmers and Cornell University's Co-operative Extension of Vegetable Agents. The majority of the attendees were students and professors who have been involved in agricultural research. They have been reportedly working on the development of a new planter for some time.

Other geographic areas in which Renaldo foresees especially strong market potential for the transplanter are Tennessee, Kentucky, North and South Carolina, Georgia, and California. The main crops that would benefit include peppers, tomatoes, cucumbers, cabbage, and lettuce. ■