

No-tillin' what you'll learn about no-tillin'

No-till is revolutionary crop production practice

LANCASTER — Perhaps the most revolutionary crop production practice to be adopted by farmers in the Mid-Atlantic region in recent years is no-tillage, stated Allan Bandel, Extension Soils Specialist at the University of Maryland.

"In Maryland for example, fewer than 10,000 acres of no-tillage corn were reported in 1970. But, in more recent years, 50 percent or more of Maryland's corn is estimated to be grown either by no-tillage or by some reduced tillage system. Some Maryland counties, particularly in the Piedmont, have reported 75 percent to 85 percent of their corn acreage to be grown without use of the moldboard plow, Bandel said.

There are many advantages with no-tillage including less soil erosion from wind and water, savings in time, energy, and labor, less root lodging due to wind and rain, firmer soil to support heavy harvesting machinery, greater drought tolerance, and also higher yield potential and greater nitrogen fertilizer efficiency.

Ordinarily, any one of these advantages should be sufficient to encourage farmers to convert their farming operation to no-tillage. And the additional benefit of higher potential yields from no-tillage than from conventional tillage corn from the same amount of nitrogen fertilizer should provide enough incentive to make "no-tillage believers" of even the most doubting farmers, he exclaimed.

Farming without using a

moldboard plow to prepare a seedbed has many variations, some of them not strictly no-tillage. Some variations might more accurately be referred to as minimum tillage because some act of stirring the soil takes place at some point during the cropping sequence.

For instance, some farmers disk before seeding a winter cover crop. Others may use a chisel plow once or twice over the field, then disk to smooth the seedbed before planting with a no-till planter.

Regardless of the degree of tillage employed before planting, if a moldboard plow is not used to turn the soil, then the practice is usually included with the minimum tillage - no-tillage group.

In conventional tillage where a moldboard plow is used, old crop residues, and surface applied lime and fertilizer are incorporated into the entire plow layer.

Where there has been absolutely no tillage, or a minimum of tillage before planting by disking or chisel plowing, incorporation of crop residues and fertilizer materials is minimized. Most of these materials remain at or very near the soil surface. Herein lies the major difference in fertilization principles between the two tillage systems.

Until no-tillage became practical, there was no alternative but to broadcast the lime and most of the fertilizer. Then, if broadcast before plowing, the fertilizer would be plowed down. Or, if

broadcast after plowing, the fertilizer could be incorporated into the surface 2 to 3 inches of soil by disking.

Research results often demonstrated that plowing corn the fertilizer could increase corn yields by 8 to 10 bushels when compared to leaving it on the surface or disking it in. It was concluded that at least part of the beneficial effects from plow-down fertilizer occurred because the fertilizer was located in the active root zone and was thus more readily available to the plant. This was particularly advantageous in a dry year.

With the fertilizer nutrients at or near the quickly dried out surface soil, nutrient exchange between the soil and the roots was impeded, if not halted together. Even if the roots were present in dry soil, it is not likely that optimal nutrient exchange would occur between the root and the soil without adequate moisture being present.

How then, can a corn plant growing with absolutely no soil tillage and no soil-fertilizer mixing produce as

well, if not better, than its cultivated counterpart?

The research conducted on this question is far from being complete, said Bandel.

Apparently, even though the fertilizer is not mixed with the plow layer, there are other no-tillage related factors that compensate for this apparent disadvantage.

For instance, studies have indicated that surface soils remain cooler and more moist under the no-tillage mulch than under conventional tillage. The higher soil moisture content at the surface could itself account for more plant root activity in the vicinity of the surface applied fertilizer.

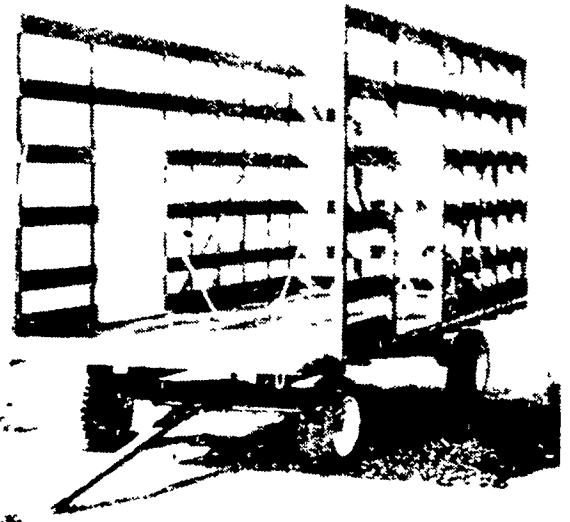
It is also possible that by minimizing soil-fertilizer mixing, soil contact with the fertilizer granule is also minimized, thus reducing fixation of phosphorus and potash. It is conceivable that phosphorus and potash fertilizers may actually be more efficiently utilized by the plant growing under no-tillage than under conventional tillage conditions.

But there is no research presently to either support or deny this theory. No-

tillage development is still in its adolescence, and adequate research has not yet been completed to provide all of the necessary

(Turn to Page D3)

HAY WAGONS & FLATBEDS



FOR INFORMATION PHONE
717-738-1857
RD #1, Ephrata, PA 17522

FACTORY AUTHORIZED



UP TO **30% OFF LIST SALE**

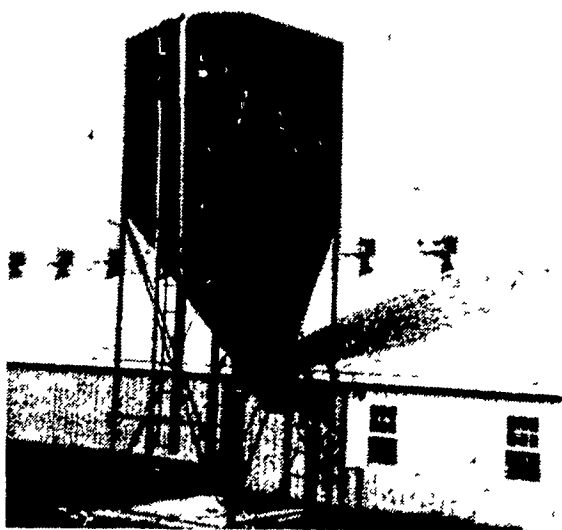
- Fireplace Inserts
- Free Standing Stoves
- Wood-Coal Furnaces
- Parlor Stoves

NOTE: PRICES NOT AVAILABLE ON PREVIOUS SOLD UNITS ON THIS FACTORY SALE

LEISURE TIME FIREPLACES

VISA 5939 Main St. (Rt 72) E Petersburg, Pa

Phone 569-1207



CUSTOM MADE FEED BINS

- Made of 14 Gauge Steel
- Longer Taper for Easier Flow
- All welded seams which make it water proof and rodent proof
- Can be installed inside or outside building
- Most installations can be made without auger.

WILL DELIVER AND INSTALL ANYWHERE

FOR FREE ESTIMATE CALL

STOLTZFUS WELDING IS NOW

BETZ'S WELDING SERVICE

Former Employ taking over entire business
717-345-4854

Home: 717-345-3212

We Sell, Service & Install

Bucket Elevators, Grain Augers, M-C Grain Dryers, Distributors, Pipes & Accessories.

Sealcrete can paint your farm buildings quickly and inexpensively...

Call for *Free estimate*

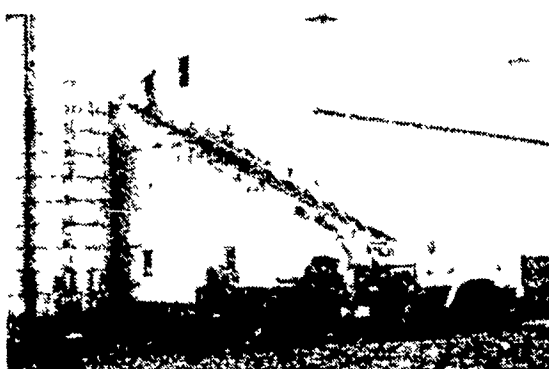


Contact

Amos Gehman Salesman

Seal Crete, Inc.

RD2, Ephrata, PA
717-859-1127



HYDRAULIC AERIAL EQUIPMENT