No-till

(Continued from Page D3)

have been extremely helpful in determining the fate of N applied to no-tillage corn These findings indicated that instead of being leached out of the root zone, much of the fertilizer nitrogen was actually tied up" in the organic layer which accumulates at the soil surface under no-tillage

Some data indicates that under no-tillage, regardless of soil texture, it would be beneficial to delay N application until the demand for N by the corn plant begins to increase, perhaps 5 to 6 weeks after planting or when the corn is 12 to 18 inches tall But additional research needs to be conducted on this problem

Nitrogen is the most costly of the major fertilizer nutrients required for crop production and obviously must be utilized efficienctly

Urea, the most concentrated solid N fertilizer available, is rapidly becoming the most important N source in dry blended fertilizers Urea, is also an important constituent of the increasingly popular liquid N solutions

The advantages of urea are excellent physical (handling and storage) characteristics blends well with other fertilizer materials, and contains more N per pound of material than any other N source except anhydrous ammonia However urea has one major disadvantage When not soil incorporated there is a relatively high probability that a significant portion of the N may be lost to the atmosphere through ammonia volatillization

In tests conducted over a 4-year period at three Maryland locations ammonium nitrate prilled urea granulated urea and 30% UAN solution were compared at four application rates on no-tillage corn In 5 out of the 12 tests urea resulted in grain yields significantly lower than those obtained from ammonium nitrate Also in another 5 of the 12 tests, 30% UAN was inferior to ammonium nitrate, but usually superior to urea

When urea was soil incorporated, research has demonstrated that apparent gaseous ammonia losses were not a problem More efficient use of urea on no-tillage corn can apparently be obtained by injecting the urea several inches beneath the soil surface with a special applicator

Similar benefits have been observed with N solutions when injected beneath the soil surface, or when surface applied in a solid stream as opposed to a more conventional fine spray

In an effort to reduce ammonia losses from surface applied urea and UAN solutions, several N materials were compared either broadcast or injected (5" to 6" deep) at the Poplar Hill Research Farm near Salisbury in 1979 Similer tests were conducted in 1980 The results were not consistent but nevertheless encouraging

Placing the nitrogen beneath the soil surface significantly improved corn grain yields in 1979 and 1980 In other tests it has frequently been observed that dribbling N solutions between the rows resulted in higher yields than if the UAN solution had been broadcast in a uniform spray

Another important aspect of fertilizing no-tillage corn is the development of excess acidity near the soil surface This can be a serious problem since under the no-tillage concept all of the N fertilizer is applied to the soil surface

Soil samples taken from near the surface usually have a much lower pH than those taken from the entire plow layer Therefore it is extremely important that soil samples be taken from the proper depth in no-tillage fields to reflect this surface soil acidity

Weed control in no-tillage corn has often been poor Research at Penn State showed that often the important triazine herbicides such as atrazine and simazine, were de-activated by low soil pH

It was soon found that although pH levels of soil samples taken from the entire plow layer appeared to be satisfactory for corn, the pH at the soil surface was often much lower, due apparently to the surface application of acid fertilizers, particularly nitrogen

Soil samples taken from several depths indicated there was no significant difference in soil pH between the 0 to 1 and the 0 to 2 inch soil samples However, there was often a significant pH difference between the average of the two samples taken near the surface and the sample taken from the 0 to 8 inch depth The latter plow layer sample even though it generally demonstrated a lower soil pH as the nitrogen rate was increased did not adequately measure surface soil pH

To compensate for this problem Bandel recommended two soil samples be taken from no-tillage fields — one from the 0 to 2 inch depth for pH and lime recommendations and another sample from the 0 to 8 inch depth for phosphorus and potassium soil test and recommendations The plow depth sample should **not** be used to estimate lime needs no-tillage fields

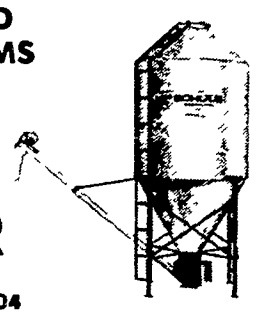
A no-tillage field that should be tested by the two-soil sample method is defined as any field that has not been moldboard plowed for at least one year and has received lime and/or fertilizer broadcast on the surface during that period Fields chisel plowed and/or disked during this period should also be treated as no-tillage for soil sampling since neither of these operations significantly incorporates surface applied fertilizers

In summary, it appears that for more efficient utilization of N fertilizers by no-tillage corn

—N application rates may be similar for no-tillage as well as for conventional tillage corn However since no-tillage has a higher yield potential than conventional tillage corn at optimal N rates, it would be justifable

(Turn to Page D6)

SPECIALISTS IN CABLEVEY FEED CONVEYING AND AUTOMATION
CABLEVEY FEED SYSTEMS
DEALER INQUIRIES INVITED
FARM - URBAN - COMMERCIAL BUILDINGS
SPECIALIZING IN COMPLETE SYSTEMS FOR HOG AND DAIRY
AUTHORIZED DISTRIBUTOR
SCHULD BULK FEED BINS AND MECHANICAL FEEDING SYSTEMS
From 3 Ton to 125 Ton Capacity
• High Pitch Top
• 60° Center Draw
• Factory Built
• Factory Delivered
• Factory Erected
Dealer for GINGWAY FREE STALLS
MERVIN MILLER
★ SALES & SERVICE ★ BUILDERS OF FINE SYSTEMS
7 KEENER ROAD, LITITZ, PA 17543 717-626-5204



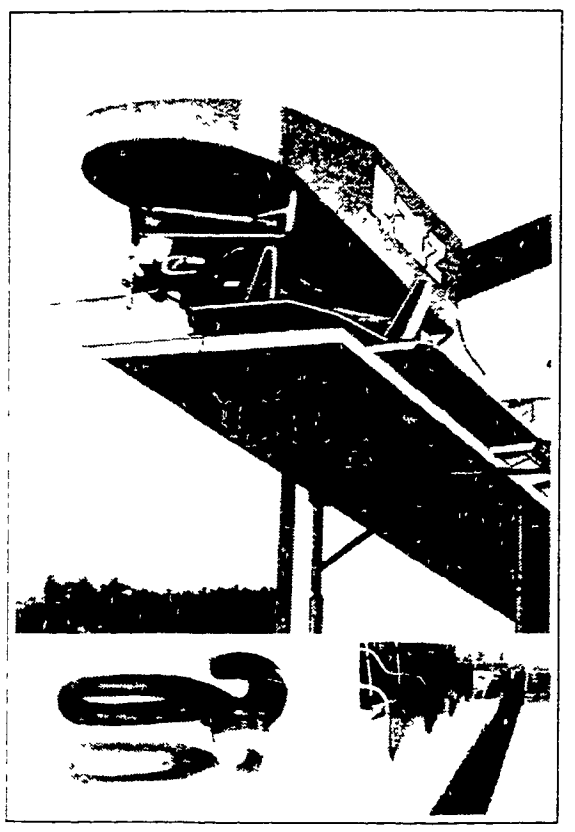
THE PATZ SOLUTION: Rugged, Dependable Gutter Cleaners

Your gutter cleaner has to work day after day year after year Better make sure you can depend on it

Patz gives you over 30 years of quality and dependability in every gutter cleaner we make *We're the ones with the proven forged steel hook and eye link* the secret to Patz performance You can easily remove or replace links and flites without tools

Your Patz gutter cleaner becomes a wise investment for you over the years because it's built to last The all steel slide and one piece steel flites with wear shoes are engineered to withstand the rugged wear of every day operation And Patz gutter cleaners are adaptable to many layouts

Talk to your Patz dealer he'll show you how Patz performance means fewer problems for you And that gives you more time to manage your livestock operation for greater profit



Heavy duty link top and ext a heavy duty link bot om for long chains and heavy loads

Adapts to varied installation layouts

Patz
Pound Wisconsin 54 6 U S A
Performance Strong as Steel

DISTRICT MANAGER
GEORGE HEATH 472 Woodcrest Dr Mechanicsburg, PA 17055 717-737-0002

Contact your nearest Patz dealer

ALEXANDRIA
MAX ISENBERG
814-669-4027

BALLY
LONGACRE ELECTRIC
215-845-2261

BEDFORD
BENCE FARM EQUIPMENT
814-623-8601

BELLEFONTE
LUCAS BARN EQUIPMENT
814-383 2806

BELLEVILLE
MACLAY & SON
717 935 2101

CAMP HILL
LLOYD SULTZBAUGH
717-737-4554

CHAMBERSBURG
CUMBERLAND FARM & DAIRY INC
717-263 1965

ELLIOTTSBURG
CARL BAER
717-582-2648

HAMBURG
SHARTLESVILLE FARM SERVICE
215-488-1025

LEBANON
MARVIN J HORST DAIRY EQUIPMENT
717-272-0871

MILLERSBURG
LANDIS LABOR SAVERS
717-692-4647

MILTON
LANDIS FARMSTEAD AUTOMATION
717-437 2375

PIPERSVILLE
MOYER FARM SERVICE
215 766-8675

QUARRYVILLE
UNICORN FARM SERVICE
JAMES E LANDIS
717-786-4158

TERRE HILL
TERRE HILL SILO CO INC
215-445-6736

MARYLAND DEALERS

HAGERSTOWN, MD
TRI-STATE FARM AUTOMATION
301 790-3698

KENNEDYVILLE MD
PINDER SERVICE CO
301-348 5263

LINEBORO, MD
WERTZ GARAGE, INC
301-374-2672

STREET, MD
P & S EQUIPMENT, INC
301-452-8521

BALED WOOD SHAVINGS
FOR THE FINEST IN ANIMAL BEDDING AND POULTRY LITTER USE
NORTHERN WHITE PINE WOOD SHAVINGS
• 4 cu. ft. & 5.4 cu. ft. Paper Bales
• Wholesale Only
AKRON WOOD SHAVINGS, Inc.
P.O. Box 141 Akron, NY 14001 716-542-4507
S.J Sollenberger, Mgr. 301-582-4556
Dealer Inquiries Invited
Call Your Local Dealer

BRANDT FEED & HORSES SUPPLIES
Lebanon PA
717 272-6781

BUCKSHIRE FEED & FARMS
Perkasie PA
215-855 1040

C F WILLS & SONS
Lemoyne PA
717 763 7951

CAPE HORNE CORNER
Red Lion PA
717 244-6425

C V FEED COOPERATIVE
Mechanicsburg PA
717 766-4161

C V FEED COOPERATIVE
Shippensburg PA
717 532 2191

DENVER WOOD PRODUCTS
New Holland PA
717 354 4174

HECKENLUBER TURKEY FARMS
Biglerville PA
717-677-8751

KRAMER FEED STORES, INC
Kramer PA
717 374-8148

JOHN HERR & SONS
Grantville PA
717-469-0888

M G HENNINGER MILLS, INC
Berrysburg PA
717 362 333

PHILLIPS FEED SERVICE
Bath PA
215 837 6061

PICKERING VALLEY FEED & FARM STORE
Lionville PA
215 363-8810

POTTSTOWN ROLLER MILLS
Pottstown PA
215 323 8620

SOMERSET FARMER SUPPLY
Somerset PA
814-443 2841

UMBERGER MILLS
Fontana PA
717-867 5161

UMBERGER MILLS
Richland PA
717-866 2324

VAN MAR FEEDS
Shoemakersville PA
215 926 2121

WINDY KNOLLS FARM
New London PA
215 255 4378

WEST CHESTER FEEDS
West Chester PA
215 696 1755