



ADVANCED AG SYSTEMS'S

Crop Soil News

<http://www.advancedagsys.com/>

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"It is the crops that feed the cows that make the milk which creates the money."

Critical Seed Corn

You are not the only one to have been hit by very bad weather this year, the corn seed industry has been hit even harder. **Do not think it is business as usual.** You will need to get your order in early **AND TAKE DELIVERY EARLY.** There are a number of farms that may not have their order filled or at least have it filled by something very different. Take delivery as soon as possible. There is little or no fall-back supplies

Use This Winter to Get a Jump on Spring

The forecast is for the la Nina to fade as we get into late spring. This should shift the weather patterns. Until then **wet** will still be the watch word. My concern for this spring is the same as many got caught with last year. When it thaws it will be to wet to apply manure and so the whole crop program may get delayed. Many made a mess getting forage out of the field, we don't want to make another mess putting manure out there. The compaction from both will limit yields well into the future.

Fortunately, there are windows that open and close throughout February and March to apply manure (if it is legal in your area). The process was developed and researched by Dr. Van Es at Cornell University and has been used by a number of farms that were on the ball and ready to take advantage of the opportunity windows as they opened. You can see a report on this at http://css.cals.cornell.edu/cals/css/extension/cropping-up-archive/wcu_vol11no2_2001a3manureinjection.pdf

The concept is that freezing ground removes liquid water and replaces it with ice. The remaining liquid water moves up to replace the frozen water and it in turn freezes to the bottom of the ice layer on the surface. This is why frost heaving pops surface rocks up and fence posts out of the ground. The whole process gradually dries the remaining soil while the surface is very high (frozen) moisture. Windows open where there is only an inch or so of frozen ground and the soil underneath is friable. Punch a hole through the frozen layer and squeeze the soil to a ball. If it makes a ball it is still to wet. If it crumbles instead, then it is dry enough for frost tillage.

Using a chisel plow, you slip just under the frozen ground and are able to till it, thus incorporating the manure to reduce volatilization of the nitrogen and loss in surface runoff (photos by Dr. Van Es). It takes about 20% more horsepower to break the frozen ground. Most farmers have switched from the wide 4+ inch twisted shovel shank to the narrow 1 or 2 inch straight shank for this. It reduces the amount of steel you drag through the ground, but still gives the full shattering and mixing, especially on corn silage

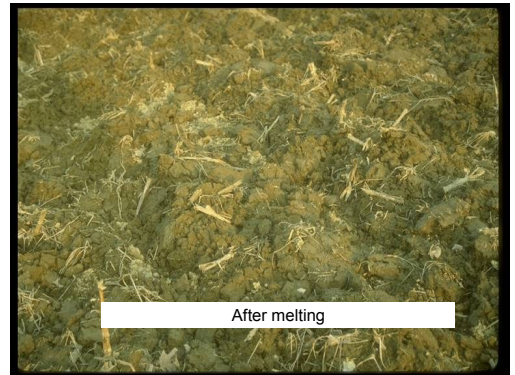


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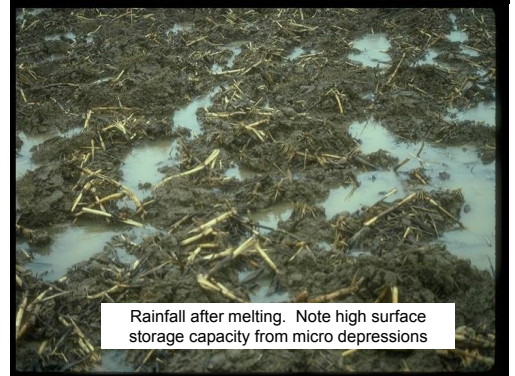
ground. It is better not to run the chisel to deep so you use the maximum lifting from the lower 1/2 of the chisel tooth. The resulting soil surface will look like a mess with big plates of frozen ground tilted every which way. Don't worry because as soon as the sun thaws the surface, the liquefied soil runs out flat and nearly level (photo at right).

There are major advantages that are huge in the long run. First, the manure is out there when the ground does its final thaw. You have a big jump on the season. Many were caught last year trying to spread manure from overflowing storage, plant corn, and cut hay – all at the same time. Second, the manure was applied on ground that is not soft, but the consistency of a road bed. It eliminates compaction from the manure trucks. Third, as you can see in the photo at the right, the many micro-pockets greatly reduce runoff, thus reducing the potential for soil erosion from the liquefied surface. As you can see in the next photo (photo by E Jacobs), some farms have taken it a second step and attached their narrow shank incorporation unit to their manure applicator for a one trip across the field. The critical step is the determination of the depth of frost and the friability of the soil underneath.

No, it is not a piece of cake to do. Yes, this takes some extra hassle to get it done, especially if you switch to narrower shanks (takes time to change them). The biggest issue is on more hilly ground where the hill tops may be frozen greater than an inch and not be able to be broken by the chisel. The valleys in sheltered warm sites may not have frost which may compromise the trafficability by the manure trucks. Level fields of corn silage would be the best targets for uniform soil conditions. Keep in mind that you may not do all the fields, but each field you can do is one less you have to do in the rush after spring thaw. The critical point of this extra effort is to get the manure out and incorporated in an environmentally sound manner. Then when the warm weather comes you can plant, rather than like last year where planting was very late as you waited and struggled to get the manure out.



After melting

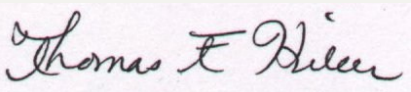


Rainfall after melting. Note high surface storage capacity from micro depressions



Taking early delivery of your fertilizer and seed for new seedings is also recommended. In this warm winter, windows may open early for seeding and then get shut out by wet weather. Unless we get dumped on by snow, this may be the one in five March's where you can plant your seedings early using minimum tillage.

Sincerely,



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