1981 Annual Report of Hardin County Soil Conservation District

Narrow based terraces find increased use

By Steven Manternach, District Conservationist

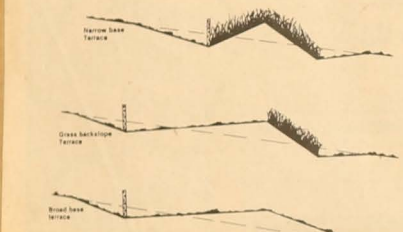
Narrow base terraces are becoming popular in Hardin County, with an advantage over other terrace types that is particularly appealing to farmers. This advantage is its comparatively lower price tag. Since the first narrow base terraces built in 1980, the number of farmers installing this type of terrace has increased from 6 in 1980 to 16 in 1981.

"Broadbase terraces require considerable earthwork to make both sides of the terrace farmable," says Earnest Hoffa, State Engineering Aide. "Earthwork is less with grass backslope terraces because one side of the terrace is left steep. Narrow base terraces are the least expensive because both sides of the terrace are left steep and seeded to grass," Hoffa reports. He estimates that narrow base terraces cost about 40 percent less than grass backslope terraces.

Narrow base terraces have other advantages, according to Hoffa. Farmers don't have to farm around the terrace intake, so equipment size isn't a limiting factor. In addition, there's no worry about farm equipment tipping over, because the terrace isn't farmed.

"But there are other considerations," Hoffa says. "Narrow base terraces aren't easily compacted, so there is a greater chance of rain or livestock damaging the terraces before the seeding is firmly established. The narrower base also may mean more susceptibility to rodent damage."

On the other hand, grass backslope terraces have the advantage of flattening out the land and broadbase terraces don't require any seeded slopes.



Three different terrace types are narrow base, grass backslope, and broad base.

Grassed backslope terraces have grass on the steep backslope. During 1981, 12,510' were built in Hardin County.

Narrow base terraces are grassed on both sides. Of the three types of terraces, the narrow base is the most popular. This year 30,457' were installed.

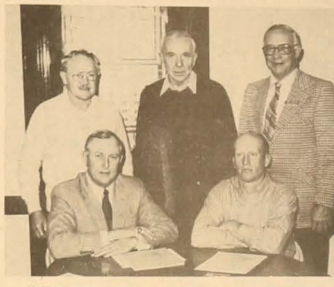
The entire broadbase terrace can be farmed. Farmers installed 2,100' during 1981.

"There's a place for all three types," says Hoffa. "A farmer must compare construction cost against costs of maintenance and land taken out of production."

According to Hoffa, a grass backslope terrace takes about two rows out of production and a narrow base terrace about four rows. Considering that you eliminate many waterways, the area lost to terraces is very little.

Equipment size and land slope are other considerations, Hoffa notes. SCS suggests terraces not be built on land steeper than 4% slope for broadbase, 14% for narrow base, and 18% for grass backslope design.

"Terraces are a proven soil saving practice and a lot more are needed," says SCS District Conservationist, Steve Manternach. "But what we're really advocating is a resource management system. Conservation practices need to be selected that best fit each farmer's operation and his land. Often a combination of practices are needed to control soil loss. An example of this is using conservation tillage practices with terraces. Many problem areas could be completely taken care of by conservation tillage. Contouring and conservation tillage, and contouring with crop rotations including hay could also be used. As costs increase and prices paid for crops decrease, I think we will see a lot more farmers going to conservation tillage system simply because of the savings on fuel. On areas that need terraces, conservation tillage can help protect the soil now, until terraces can be built later."



HARDIN COUNTY SOIL CONSERVATION DISTRICT COMMISSIONERS — Front row, left to right: Gary Walters, chairman, and Jim Tidman, treasurer. Standing, l to r: Carroll Hobson, Harry Lawless and Caleb Knutson. Not present, Martin Bruer, vice chairman.

SOIL CONSERVATION SERVICE OFFICE PERSONNEL — Front row, left to right: Valerie Gerdes, soil conservationist; Steve Manternach, district conservationist; and Melinda Schwarck, state clerk. Back row, l to r: Fred Rosenkrans, part-time technician (W.A.E.), and Earnest Hoffa, state engineering aide. Fort Dodge area office personnel include Dennis Pate, area conservationist; Daryl Carpenter, agricultural engineer; Chuck Wright, civil engineering technician; and Barbara Quade, area clerk.

Good soil management is good conservation

By Val Gerdes, Soil Conservationist

Terraces, waterways, windbreaks, contouring and conservation tillage are a few of the management practices that can make up a resource management system. If those words seem to throw you a bit, just think of them as ways to keep your farm productive and your topsoil on your fields.

Many landowners make their first contact with the Soil Conservation Service to get information on a specific problem like cost share to fix a gully. They can fix the gully but if they don't treat the cause of the gully, the gully will come back. The area above the gully in question, may need one or several practices to control and eliminate the problem. Just as it takes a combination of exercise and good nutrition to maintain a healthy body, a combination of practices and good management are needed to keep a farm productive.

Farming today is a lot more complicated than just planting the seed and harvesting the crop. New chemicals, new seed varieties, marketing techniques all need to be evaluated often. Changes in conservation tillage equipment, yield information, as well as soil loss should be evaluated before changing tillage systems. Many times soil loss under fall plowing can actually cause a loss of fertility.

Garry Schwarck had a field that he had considered hada bit too much erosion. With 200' long, 4% slopes, the field when fall plowed with a corn-bean rotation, lost 10.5 tons per acre per year, (5 ton/ac/yr was the maximum allowable soil loss). Garry was using a till plant system which reduced soil loss to an average of 6.6 tons per acre per year. By planting on a contour using his till plant system with 75% residue, the soil loss was only 3.7 tons per acre per year.

"The contours the Hardin SCS laid out for us were easier to work on than I had anticipated they would be. With the gradual curves and few point rows, we picked most of the field with a pull type picker," said Garry.

Many other farmers are finding contouring, conservation tillage or combinations of these, can reduce the need for terracing on some fields. Alternatives that fit each farmer's own individual needs and fields are presented and the farmer makes his own decision. With information from the Soil Conservation Service, each farmer can choose what works best for his farm, his own resource management system.

Victor Schwarck, Eldora, picks corn for son, Garry Schwarck. Garry farms with a combination of till plant on contour rows to reduce soil erosion and maintain soil productivity as part of his resource management system.

Fall plowing making you money?

The following statements are proof that fall tillage is an expensive non-productive practice.

—Tillage is always counter productive in terms of soil and plant nutrient loss.

—Nutrient loss is always increased when nutrients are incorporated in any manner.

—It is totally unnecessary to till the land just to incorporate plant nutrients.

—Can't control soil erosion on soybean stubble unless it is no-tilled.

These statements were made by John Laflen, Agricultural Engineer at Iowa State University, who studied nutrient losses during 1980. Laflen also commented that the average annual nutrient loss on a typical fall plowed field with 11 ton/acre soil loss in Iowa was $30 per acre. The typical soil loss from a fall plowed field in Hardin County is 11 ton/ac/ yr. This means that a typical fall plowed field in Hardin County is losing about $30 per acre worth of plant nutrient every year.

Is fall plowing really worth the cost? Is it really cheaper to fall plow than to spend money on chemicals needed for no-till?

If you haven't decided to give up fall plowing yet, think of soil as money rather than dirt. Then look at the soil that is blown or washed away from your field as $30 per/acre rather than 11 ton/ac/yr.

What is your soil loss? How many dollars per acre are you losing? What can you do about it? See the Soil Conservation District Office in Eldora for further information.

1981 - Banner year for soil conservation

By Gary Walters, Chairman of Hardin SCD

In terms of funds allocated for permanent soil erosion practices, 1981 was a Banner Year. The Hardin Soil Conservation District Commissioner allocated $85,362.12 for construction purposes on terraces, structures and diversions.

Praise needs to be heaped upon the SCD Staff for the technical work in having the projects ready for the supplemental allocation. This readiness brought to Hardin's Soil Conservation District $46,271.12 of supplemental money from the Department of Soil Conservation in addition to the $22,491.00 initial allocation. An additional $16,600.00 was allocated from the special fund for the Pine Lake Watershed.

Many more farmers left their soybean and corn fields undisturbed during the fall of 1981. Much work needs to be done to convince others to do less tillage. The technology and machinery are available.

Much information from the Hardin Soil Conservation District Office and the Extension Office will be helpful to those who desire assistance.

No-till planters available in 1982

By Steven Manternach

Area farmers will find it easier to try no-till this spring. Pine Lake Implement in Eldora, and Benton-Higgins Implement in Alden will both have no-till planters available to rent.

Carl Stevens, Manager of Pine Lake Implement, will have a 6 row - 30 inch Allis Chalmers (300) no-till planter. "The planter will come with a tractor and monitor," says Stevens. "The planter will have no-till coulters and insecticide attachments. Row spacings can be easily changed since each planting unit is driven independent of the others. With this planter, you will get accurate singulation for corn, and soybeans which is important in planting with any type of tillage systems and especially important in no-till. Allis Chalmers has been a leader in no-till soil conserving implements and especially in no-till planters. I would like to encourage all farmers to try conservation tillage and no-till," says Stevens. "We will have a training school for those who sign up for the planter to show them how to make adjustments.

"Wayne Higgins, of Benton-Higgins Implement in Alden, will have a 6 row, 30 inch John Deere no-till planter available to rent. The planter will be fully equipped with herbicide, insecticide and liquid starter fertilizer attachments. We will include a tractor and monitor plus we will have an operator to go with the planter to assist the farmer in getting started," says Higgins. "Farmers can also rent a Hiniker Cultivator that will work in the heaviest crop residue. We would like to see as many farmers try no-till and conservation tillage. Our main idea with this planter program is to assist the farm community make a decision on whether they go no-till or conservation tillage."

"So far there seems to be a lot of interest in no-till," says Steve Manternach, District Conservationist. "A lot of people who have been using conservation tillage the past few years are ready to try no-till. The last time we counted, we had 20 landowners who were interested in renting the no-till planters. In 1982, we had approximately 350 acres of no-till. This year we hope to have at least 1,000 acres. This program should allow people to try no-till on their own land without buying a new planter."

For more details on the planter rental program, see the Soil Conservation District Office in Eldora.

Do you need to replace your planter?

By Earnest Hoffa, Engineering Aide-

We strongly suggest that you consider a reduced tillage system of row crop production.

Row crop land that has 6% or less slope, for the most part, can be farmed with reduced tillage systems and not be over the soil loss limits. As a higher percent of your land exceeds the 6% slope, you may have to add some other conservation practices. You may have to contour some of the more uniform slopes, and may have to terrace some of the less uniform areas.

There are many different reduced tillage systems that work well. To determine the one for your operation, you will want to observe closely, the working principle of several different systems that could fit your operation. You may even want to try a few acres with a rented machine.

There seems to be a trend developing in reduced tillage systems. That is no-till. No-till means, no-tillage before planting and all of the residue is left on the surface after planting. Some of the pioneers in reduced tillage row crop production, started out with a chisel or heavy disk or a strip till planting system. Now many have evolved to a no-till system.

One of these pioneers if Dan Statmueller, of Jones County in eastern Iowa. He has gone from a chisel plow system to strip till and now to a near no-till system. He still does some stalk cutting just before planting. He still wants some ridge to plant in, so he depends on a cultivator. Statmueller uses a planter that can be used to apply herbicides, insecticides and fertilizer.

Another inovation that he uses successfully, is alternating 6 rows of corn and 6 rows of soybeans. He does this on his long fields and on his thinner soils. On the thinner soils, he gets better yields and on the long rows it is more convenient.

A term that Dan often uses to describe his system is, "Profit Tillage."

Conservation tillage saves soil..use it or lose it

By Caleb Knutson, Commissioner

Most farmers have changed farming practices in the last 5 years to include some form of mulch tillage. We got involved in conservation or mulch tillage in 1963 because my father, at the young age of 77, said one day, we are losing our productive topsoil faster than we should. If we don't do something soon, it could be too late.

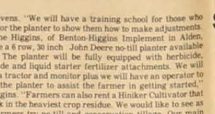
Now if you think we were losing it fast in 1963, remember how we speeded it up the next 10 to 15 years. Our generation has done more damage to the topsoil of Iowa than the two previous generations. As we soon had tractors with more and more horsepower and could get all of our fall tillage work finished early enough in the fall to leave the soil vulnerable to erosion from October until the end of June the next year when the corn and beans were finally large enough to help cover the ground. Also we got more than a normal years rainfall in the April to June period. As farmers went to one-half corn and one-half soybeans, the soil loss continued to climb. This was before it was general knowledge by the farmers of Iowa that the ability of our valuable soil to maintain its productivity was with a soil loss of not more than 5 tons per acre per year. Now consider that some fields have been checked here in the Radcliffe area with 34 tons of soil loss per acre per year. That is the weight equivalent of over 1,200 bushels of corn per acre per year. How long do you think this can continue before the productivity drops? Yet some of you will say "just put on some fertilizer," it will be ok. But now that the cost of fertilizer is the price it is, can you afford to use double and triple the regular amount you are using now to get it put? What about the loss of the necessary rainfall that runs off those "brown knobs" into the waterways and creeks along with the soil?

Dr. John Laflin, head of the U.S.D.A. – A.R.S. research team at I.S.U., reported that Iowa could lose 253 million tons of topsoil yearly if all Iowa were plowed. Under a no-till system, soil loss on Iowa's cropland could be reduced to 21 million tons or 8% of that amount. With fall plowing, we would lose 967 million lbs. of nitrogen per year from erosion. With chisel disking, this would be reduced to 776 million lbs. With no-till, this would be reduced to 170 million lbs. Laflin reported that U.S. farmland loses 2.8 billion tons of topsoil per year. At the present fertilizer cost, he calculated 11.4 billion dollars worth of nutrients were moving off the farm. Instead of depositing that value in the bank, it is being deposited in the Gulf of Mexico, and checks written on that deposit are not being honored. The Iowa "2000" program is the goal the Iowa Legislature has set to have all of the soil loss in Iowa down to 5 tons per acre or less, by the year 2000. This is a very ambitious program that may seem to be unattainable. Factors that are changing all of this for the landowner-operators is the squeeze of the cost of fertilizer and money against the prices of the crops produced. Then by the year "2000" the old style operators will be gone and new thinking will take over. Namely, a way to farm with less power requirements that will give adequate yield and a guarantee to save the available moisture in a dry year without aggravating the situation in a wet year.

In 1963, there were no proven ways to accomplish these requirements..We had to learn everything in the field. There wasn't any of it in the books. Also the seed corn companies were not ready with the right seed. The machinery was just beginning and the knowledge of how the residue would affect the crop was just not there. Today, all this information is available. It is up to us to use this information and start saving soil before it is too late!

If you are losing topsoil like this, you are losing valuable plant nutrients. Fertilizer and plant nutrients attached to soil particles can be moved by wind or water. Fail plowing to incorporate fertilizer also causes a loss of fertility. Is fall plowing worth it?

Sprayer important part of no-till system



Reprinted from Wallaces Farmer, November 14, 1981

Next to the planter, the sprayer is the important piece of equipment in any tillage system, especially in no-till. If the sprayer is not set up properly, the rate you apply may not be the rate you want.

No-till requires high gallonage (30-50 gal./ac.) and high pressure (35 lbs.). High pressure and high gallonage are needed to make sure the herbicide you apply gets to the ground.

Before trying no-till, make sure your sprayer has the following:

1. Sprayer capacity 300 gallons or larger.
2. Equipped with a turbine or centrifugal pump.
3. Suction hose diameter 1¼" or larger.
4. Suction hoses should be steel braided or nylon reinforced.
5. Shutoff control valve.
6. Hose fittings should have the same inside diameter as the hoses so that the flow is not restricted.
7. Hoses on the boom should be ½" in diameter and fed by hoses that are 3/4" in diameter.
8. Use a Y or T strainer in the system just ahead of the pump, with a screen from 10, 16, or 20 mesh.
9. Place pressure gauges on the booms. With gauges at this location, you'll get a better idea of the pressure being delivered to the nozzles.
10. Flat fan tip nozzles with pressure range of 20 to 40 lbs. per square inch are recommended. Nylon and stainless steel tips are the best because they last longer.

Once your sprayer is set up and ready to go, be sure to calibrate it. Calibration will test the sprayer to be sure proper amounts of chemicals are being applied. For further information on sprayer calibration and herbicide rates, contact the Soil Conservation District Office or the Hardin County Extension Service.

ANNUAL REPORT— 1981 ACCOMPLISHMENTS	
FARMS CONTACTED	474 No.
CONSERVATION PRACTICES	233 No.
CONSERVATION PLANS	2,354 Ac.
CONSERVATION TILLAGE	10,797 Ac.
CONTOURING	51 Ac.
WINDBREAKS	12 Ac.
GRADE STABILIZATION STRUCTURES	3 No.
GRASSED WATERWAYS	8 Ac.
PARALLEL TERRACES	45,967 Ft.
SEDIMENT AND WATER CONTROL STRUCTURES	5,140 Ft.
CROPLAND BENEFITTED	13,547 Ac.
CROPLAND SOIL LOSS REDUCED TO 5/TON/ACRE	9,656 Ac.

Financial Report (July 1, 1980 - June 30, 1981)

SM Budget: District Allocation	7,700.00		
Expenses			
Commissioners Mileage, Meals			
Dues	465.62		
Office Supplies & Expense	1,049.10		
Printing	70.56		
Per Diem	1,529.25		
Released back to State	139.77		
Balance on hand 6-30-81	.00		
SM Budget: District Allocation		27,361.00	
Loss Beds & State Aid			
Expense	24,197.39		
Travel	26.26		
Released back to State	3,138.61		
Balance on hand 6-30-81	.00		
SM Budget:Cost Share Program			
July 1, 1980 thru June 30, 1981			
Allocation		45,000.00	
Obligated or Spent	44,907.83		
Balance returned to State	92.17		
Balance Unobligated	.00		
Revolving Account			
July 1, 1980 Balance		369.39	
Receipts			
Loans Completed	1,411.77		
Disbursement			
Office Supplies	1,288.66		
June 30, 1981 Balance		382.37	
Conservation Club Account			
July 1, 1980 Balance		580.76	
Receipts			
Contributions	883.90		
Flags sold	28.90		
Miscellaneous	7.10		
Disbursement			
Cooler Maintenance Agree.			
Interest			274.00
State Ownership Material			74.01
NACD Dues			190.00
IASCD Dues			150.00
Misc. & Office Expense			146.81
June 30, 1981 Balance			484.39
Employees Account			
County Funds used for Tech. Assistance			2,481.01

Fed up with wind and water erosion? Did you ever want to try no-till, but never had the right planter? If there is enough interest, the Hardin SCD will make arrangements for you to rent a no-till planter. Fill out the following coupon and mail to the Soil Conservation District Office, P.O. Box 108, Eldora.

Name_____

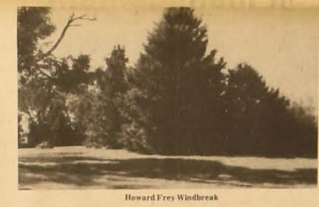
Address_____

Number of acres you wish to try no-till on_____

Crop to be planted_____

They like benefits of good windbreaks

By Val Gerdes, Soil Conservationist



Howard Frey Windbreak

Howard Frey, Eldora, has been planting trees for windbreaks since 1934. Mr. Frey's windbreak on his farm was the 1961 winner of the Izaak Walton Windbreak Award. Several rows of mature Douglas fir have been interplanted with Norway spruce and rows of walnut seedlings and honeysuckle were added.

Mr. Frey says, "The douglas fir made a good windbreak, but the storms have taken the tops out of many and some are losing lower branches. It's time to start replacing these trees to maintain a dense windbreak." He also recommends that you don't plant on old livestock pens or drainage areas from livestock. "The soil isn't good for evergreens if it's had a lot of manure on it."

Mr. Frey has planted windbreaks for his neighbors over the years and many of them are still standing today. Mr. Frey has seen the trees he and neighbors planted, grow and reach maturity, and he continues to plant trees so others can enjoy the many benefits of a good windbreak.

"When you set trees out among older trees you have to keep the weeds down and water them because the older tree roots will try to take the moisture away from the little ones," says Frey. The recommended way to control weeds and grass is to mulch 1 - 2 foot around the base of the tree with 3 - 4 inches of wood chips, clean straw or ground corncobs. The mulch helps to conserve the moisture and maintain a more even soil temperature. The best way to water is an inch of rain every 7 to 10 days. If rain doesn't come, water the trees the equivalent of an inch of rain. It takes time, but it's well worth it.

Mr. and Mrs. Duane Swart of Iowa Falls, are planning to plant a new windbreak on the farm they rent. "It's going to help cut our heating costs and keep the snow back," explained Mrs. Swart. "The old grove is starting to die back and we want to have more protection," said Mr. Swart. They realize that mulching and watering will be necessary as well as keeping the rabbits away. They will wrap the trees and put wire around to protect them.

In order for a windbreak to be effective and last a long time, careful, considerate planning is needed. Determine the area you and your family want to protect, include barns, confinement areas, homes, driveways, even gardens. Windbreaks or groves should be planted on the north and west of the area to be protected from winter storms.

Plan on planting 30' from the edge of the roadway on the south and east sides and 126' from the north or west side of roads. Where snow drifting may be a problem, the distance from the primary area to be protected to the outside row should be a minimum of 100'.

When choosing the trees and shrubs for your windbreak, use varieties suitable to the soils in the area and resistant to chemicals or insects that may be around. Using several different kinds of trees and shrubs will lessen the chance of a complete loss of a planting by drought, disease, or insects and improve the visual resource.

As Mrs. Swart said, "When your farm and home look good, you feel good about yourself, too."

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