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G1503, Operating and Maintaining Grassed Outlet Terrace Systems

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Operating and Maintaining Grassed Outlet Terrace Systems

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Operating terrace systems properly depends on good farming practices and prompt correction of problems. Terraces should be inspected one or more times each year. Terrace ridge height and shape should be maintained as built. Occasionally, a modification may be required (for example, if you change basic machinery size from 6-row to 8-row).

Erosion and most tillage operations besides plowing tend to fill terrace channels and reduce terrace height. Sediment deposits in the channel reduce the capacity of the channel to carry water off the field. Both effects increase the chances of water flowing over the terrace during heavy rains.

Tillage operations performed over terraces (parallel to a field boundary instead of parallel to the terrace) are especially detrimental to terraces. Tillage tools should not straddle the ridge. The ends of the equipment should operate along the top of the ridge to prevent lowering of the terrace ridge.

Conservation tillage and tillage and planting operations that run parallel to the terrace ridge reduce erosion and sediment buildup in terrace channels. Inter-terrace erosion and terrace channel deposits increase as terrace spacing is increased and as terraces deviate from the field's natural contour. Using conservation tillage to reduce erosion becomes even more desirable in such situations. Your goal may be to use a plow only as required for maintaining terrace ridges and not to plow the steeper backslope and the area between the terraces.

Safety

Terrace ridges, especially those with steep backslopes, are potentially hazardous. Perform all farming and maintenance operations with caution and common sense to reduce the chance of injury to the operator and damage to the machine.

Terrace maintenance problems

Common terrace problems include reduced ridge height (which can be local low spots or the entire terrace), decreased channel capacity, sediment bars and ponding of water in the channel. One or more of these problems may cause water from heavy rains to overflow the ridge, causing the terrace system to deteriorate rapidly as ridge height is reduced or gullies cut through the ridge and down to the next terrace. Water overflowing from one terrace frequently causes terraces below to overflow as well.

Ponding may be caused by sediment bars or other channel irregularities. High areas usually must be removed to restore channel grade. Low areas occasionally may require filling. Channel capacity at the discharge into the waterway may be reduced by sediment deposits, tillage operations or

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crossing the terrace. Changing travel patterns to eliminate crossing terraces may be necessary.

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Plowing terrace ridges

Plowing the ridge as part of each tillage/crop sequence normally maintains terrace height and shape if it is done properly. Typically, moldboard plowing with a back furrow at the top of the ridge and leaving a single dead furrow in the terrace channel and at the toe of the backslope maintains proper height and shape. To decrease the furrow depth at the bottom of the backslope or in the channel, make the last trip with the plow with the rear of the plow cutting quite shallowly.

To further increase the channel capacity on neglected terraces, leave a double dead furrow in the terrace channel. This can be done by using a two-way plow to throw all furrows uphill from the ridge top down to the next terrace channel. With a standard one-way plow, a second back furrow between terraces eases the creation of the double dead furrow in the channel. Place the second back furrow parallel to the terrace channel below, leaving the irregular areas on non-parallel terraces below the upper terrace.

Ridge maintenance without plowing

If no-till or conservation tillage is used to reduce the erosion associated with plowing, sediment may have to be removed from terrace channels with earth-moving equipment such as a front-end loader, dozer, blade or scraper. Use any sediment removed to build up low spots on the terrace ridge or in the field.

Additional maintenance for narrow-base and steep backslope terraces

Since the steep slopes of the narrow-base ridges and steep backslope terraces are vegetated and cannot be farmed, additional maintenance may be required.

A vigorous stand of vegetation should be maintained on the steep slopes to help control weeds, trees and brush. This may require periodic fertilizer and herbicide applications. Trap and remove burrowing animals to prevent damage to the terrace ridge.

Maintain the front slope of steep backslope terraces by plowing as you would in building broad-base terraces. You may need to periodically remove sediment accumulation in narrow-base terraces with a front-end loader or scraper.

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