

# Terraces

## Iowa Job Sheet



Natural Resources Conservation Service  
Des Moines, Iowa

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**Narrow base**



**Grassed backslope**



**Broadbase**

### What is terracing?

Terraces are earthen structures that intercept runoff on moderate to steep slopes. They transform long slopes into a series of shorter slopes. Terraces reduce the rate of runoff and allow soil particles to settle out. The resulting cleaner water is then carried off the field in a non-erosive manner.

### How it helps the land

Terraces are used to reduce sheet and rill erosion and prevent gully development. They are most effective when used in combination with other practices such as conservation

tillage, crop rotations, and field borders.

Terracing reduces sediment pollution of lakes and streams, and traps phosphorus attached to sediment particles. Grassed frontslopes and backslopes of some terraces provide cover for wildlife.

### Where the practice applies

Terraces can be used on fields where sheet and rill erosion or ephemeral gullies are a problem. They can also be used where runoff or sediment could impair water quality or cause damage downstream.

### Where to get help

For assistance in planning, designing and laying out a terrace system on your farm, contact your local Natural Resources Conservation Service (NRCS) office. For more job sheets and conservation information visit the NRCS website at [www.ia.nrcs.usda.gov](http://www.ia.nrcs.usda.gov)

## Requirements of terracing

Several important factors must be considered when planning and designing a terrace system:

- There are two types of terraces. *Storage terraces* collect water and store it until it can infiltrate into the ground or be released through a stable outlet. Underground outlets with pipe intakes are the most common type of outlet. Deep soils with high infiltration rates can sometimes be used as outlets. *Gradient terraces* are designed as channels to slow runoff water and carry it to a stable outlet like a grassed waterway.
  - Terraces must generally fit the contour of the land. Deviations from the contour must be limited and are allowed only when necessary to obtain good alignment. Always check with the NRCS office before allowing any deviation from the design.
  - Terraces are designed to control runoff from a 10-year frequency, 24-hour storm. For storage terraces, that capacity is increased to also hold the estimated volume of 10 years' sediment accumulation.
  - Terraces are spaced to control sheet and rill erosion and stop ephemeral gullying. Terrace spacing is determined by several factors including soil type, slope, and the use of other conservation practices such as conservation tillage.
  - There are three typical terrace cross section shapes. The pictures on the front illustrate each shape. Following is a brief overview of each.
- **Grassed backslope terraces** have a farmable frontslope with a 2:1 backslope (2 feet horizontal to every 1 foot of vertical drop). Downhill slope is seeded to perennial grass.

- **Narrow base terraces** have 2:1 slopes on both the frontslope and backslope. Both front and backslope are seeded to perennial grasses.
- **Broadbase terraces** are flatter looking terraces that are farmed on both slopes. They should not be built on land slopes greater than 8 percent. Farmable slopes should not be steeper than 5:1.

## Applying the practice

This practice is considered to be installed when construction is completed and seeding is established.

After terraces are built, chisel the portion of the terrace that will be farmed to loosen compacted soil. The backslopes of grassed backslope terraces and the front and backslopes of narrow base terraces should be fertilized and seeded according to the recommendations below. Oats may be seeded as a nurse crop at the rate of one bushel/acre during the spring.

### Recommended fertilizer (lbs/ac)

N	P	K	Lime
_____	_____	_____	_____

### Recommended seeding rates for your terrace species

species	lbs/ac
_____	_____
_____	_____
_____	_____

## Other considerations

- Where terraces are parallel, there are very few problems with planting. If terraces are not parallel, short rows should be kept between terraces rather than turning on terraces. A short row correction area could be left in grass rather than turning on crops.
- If terraces are not the same length, plant from the longer terrace to the shorter one.
- Do not farm the backslope of grassed backslope terraces or the front or backslopes of narrow base

terraces. Also be careful not to crowd these grassed areas with farming operations.

## Maintaining the practice

- Avoid farming too close to intakes. Farming operations can cause ridges that block drainage of the terrace channel.
- Remove sediment build-up in the terrace channel to maintain the required water holding capacity.
- Repair sections of the terrace which have eroded or have excessive settlement.
- Fill any settled or eroded areas in the tile trench.
- Repair or replace damaged tile intakes.
- Remove sediment build-up and trash from around the intake.
- Control rodents or burrowing animals.
- Control weeds, brush, and trees by spraying or mowing.
- Don't operate farm equipment on steep frontslopes and/or backslopes.
- Reseed and fertilize as needed to maintain good vegetation.
- Where grassed waterways are used as terrace outlets, they must be maintained to prevent gully erosion.

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