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CC23 Revised 1979 Emergency Flood Information...Improvement of Flood Damaged Cropland

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Emergency Flood Information

IMPROVEMENT OF FLOOD DAMAGED CROPLAND

By Elbert C. Dickey, Extension Agricultural Engineer

Flooded cropland almost always needs some work to restore its original productivity. Listed below are the operations, in logical order, needed to do this quickly:

1. Repair or rebuild dikes or levees.

2. Open mouths of tributary waterways or streams that are clogged with silt, sand and debris.

3. Clean out farm ditches and drains where needed to remove excess moisture from the soil. Work up from the lower end.

4. Clear tile drain outlets and check to see that drains are operating properly. Rebuild or repair any damaged outlet headwalls. Obstructions in line can frequently be located by holes in the ground over the tile. Standing water over a tile line indicates that it is not operating satisfactorily. In making repairs, work upward from the outlet.

5. Remove excess water as quickly as possible. With approval of proper authorities, excavate through embankments to drainage ways to remove water by gravity. If water in drainage way is higher than that in field to be drained, install portable pumps on dike or ditch bank. To determine the number and sizes of pumps needed to drain an area, estimate the acreage covered and average depth of water.

A 25-acre field covered with water averaging three (3) feet deep contains 75 acre-feet of water.

A pump discharging 1350 gallons per minute or 3 cubic feet per second (450 gpm = 1 cubic foot per second), will remove 6 acre feet in 24 hours, or 75 acre-feet in about 12 1/2 days. Five such pumps would remove 75 acre-feet in 2 1/2 days.

6. Land leveling may be needed to smooth rough areas, to spread deposits of sand or silt, and to fill holes scoured out by flood waters.

For minor leveling and smoothing, a float or drag may be used. To do best work, the drag should be comparatively long—at least three times its width.

For heavy leveling, filling ditches and holes, and spreading sand and silt deposits, bulldozers and graders can be used. Where available, large crawler tractors and carry-alls will probably be the most economical.

7. Treat each field as needed. A competent soils expert can help in determining the type and extent of special practices needed. Usually sediment, silt and sand deposits can be plowed under. This will bring the original underlying heavier soil and organic matter to the surface.

Ordinary farm tractors and high clearance plows may be used in plowing under deposits up to six inches (15 cm) in depth. Five or six inches (12.5-15 cm) of original ground should be brought to the surface. For incorporating sediment deposits having depths greater than 9 inches (23 cm), special plows are needed. Moldboard and disk plows which will operate to a depth of 16 to 20 inches (40.5-61 cm) are sometimes available from implement companies.

For depths greater than 20 inches (40.5 cm), it will probably be necessary to engage the services of a contractor having the proper equipment. After plowing and leveling, a smoothing operation with a spring tooth harrow or other equipment will help mix the soils to provide a more uniform surface soil.

Have soil tested to determine the kind and amount of fertilizer needed. Nitrogen especially may be required. The application of fertilizer will be helpful in establishing a vegetative cover quickly.

Take care to keep vehicle traffic across fields to a minimum to decrease soil compaction and future water penetration problems.

Contact your county extension agent for further information.

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