



FLOOD IRRIGATION

CONTOUR FLOOD IRRIGATION

Flood Irrigation Intro

Flood irrigation, or surface irrigation, is the irrigation method whereby water is flowed by gravity over the surface of the ground to be wetted. The common methods of flood irrigation in Jackson County are contour flood irrigation and/or wild flood irrigation. Other principle types of flood irrigation include level basin, border strip and furrow.

This factsheet is intended for use by beginner or novice contour flood irrigators who are irrigating perennial grasses such as pasture or hay on sloping terrain.

Contour Flood Irrigation



Contour Flood Irrigation uses small ditches which are installed on contour, perpendicular to the slope (across the slope) to distribute the water across the field.

Water is supplied to the contour ditches from a head ditch or main canal/ditch, and is dammed up in such a way so the water spills out of the downhill side of the ditch and sheets across the downhill slope. Water is then picked up and re-spread using subsequent contour ditches spaced downhill about 75 to 400 feet apart. This process of picking up and spreading water repeats until the end of the field.

The water at the end of the field (tailwater, runoff) flows to the next irrigator's field, into a roadside ditch, or other ditch and eventually ends up in a stream.

Application of Contour Flood Irrigation:

Sloping, steep, uneven terrain. Pasture, hay fields, sod forming crops with complete ground cover. Can be used on most soil types except deep sandy soils. Erosion can be a big concern on certain soils.

Advantages:

Low initial cost, no landgrading/forming, little to no energy use, low equipment and material cost. Adequate for production of low value crops.

Limitations:

Erosion concerns, high labor requirement, limited crop types, limited crop production, water quality issues, low water use efficiency. Hard to distribute water evenly over a sloping/undulated field and there are typically dry areas at high spots and wet areas at low spots.

Ditch Maintenance

An effective irrigation conveyance ditch is one that is clean and clear of vegetation and has well maintained gates, valves, and checks. Excessive vegetation prevents the irrigator from delivering the full amount of allotted water and it must be removed from the ditch.

Effective and Efficient flood irrigation is only possible with Effective and Efficient ditches that are properly maintained.



Water Supply & Availability

Water for irrigation comes from a nearby reservoir or stream and may be delivered to your farm by irrigation districts, irrigation associations, ditch associations, neighborhood cooperation's, or other.

Rotation Schedule: Water is available for irrigation for a certain number of hours, generally every 10-14 days. i.e. 3 days, every 2 weeks. The schedule is usually set at the beginning of season depending on water availability, weather, etc.

On-Demand: Ability to irrigate whenever your crop needs it by ordering it from the water supplier.

The irrigator's job is to adjust the time the water is applied to different areas of their field.

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Irrigation & Maintenance Schedule

March

Clean all ditches of all vegetation to at least 1 foot on either side. Either by hand, burning, and/or spraying. Re-shape ditches and delivery points that have been damaged by livestock, rodents, or wildlife. Take care to not increase the depth of the ditch. Compact ditch banks and ditch bottoms.

Prevent erosion by stabilizing the beginning and the end of the ditches with well rooted plants or rocks.

April, May

First watering around mid-late April. Identify irrigation schedule with irrigation districts, ditch riders, neighbors, etc. Spend time (multiple hours, day and night) walking the water, watching how the water is behaving in the ditches and on the land. Use the set locations and set times provided by the previous irrigator, or neighbors, as a starting point.

Make notes on a map of set times, leaky areas, wet areas, etc. Take 'date stamped' pictures of irrigation.

More water may be supplied than what is needed by the crop, be careful of excess runoff, and excess wet spots. Don't set it and forget it.

June, July, August

Hottest time of the year and more dry spots will become apparent. All of the supplied water will be utilized for crop production. However, plant growth slows due to hot weather. Plant growth (moss, algae, etc) in the ditches and canals picks up and inlet screens or debris screens need cleaning. Clean out ditches of vegetation as needed.

Water will behave differently now that the soil is dryer and may begin to crack. Water supply may be less. Adjust set times accordingly.

'You can try to irrigate all of your acres poorly, or 80% of your acres well'.

September

May see one last growth spurt in plants now that the weather is cooling. Do not over water at this time as over-watering will lead to plant stress and excessive water waste. Over-irrigation is a leading cause of poor crop production in flood irrigated fields.

October

Last watering around early October. Clean out debris in ditches to reduce work the following spring. Note crop production, set times, ditch maintenance, water supply, and other notes in an annual irrigation journal. Refer to this journal in spring of the following year.

GREAT crop production from GREAT flood irrigation, takes a GREAT amount of TIME and EFFORT

Tools of the Trade

Weed wacker and/or Sprayer - *Cleaning Ditches*

Shovel and/or Hoe - *Adjust irrigation sets, fix breaks*

Plywood boards/metal sheets and culvert sections or

Orange flood irrigation tarps - *Adjust sets*

Good Boots: Muck boots or Bog boots, others

Gloves (polyurethane coated) and full coverage hat

Additional: Soil probe, water present sensor, soil moisture sensors, automatic gates, drones, camera, write in the rain notepad, large field map.



Water Quality and the 'Inland Rogue Agricultural Water Quality Management Area Plan' (AgWQMP)

Goal is to get people engaged in agricultural activities to maintain and improve water quality while preserving and enhancing economic viability.

The water that runs off the end of flood irrigated land (tailwater) warms local streams and is a leading cause of water quality decline in the region.

See the Oregon Department of Agriculture Inland Rogue Agricultural Water Quality Management Area Plan and Rules for more information.

Water Rights

A valid water right is needed to irrigate the land. It is OK to use LESS water.

See the Oregon Water Resources Department (OWRD): Water Rights In Oregon, booklet for more information.

Contact your neighbor, irrigation district, irrigation association, JSWCD, or OWRD if you have questions about irrigation.