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Perspective

# Description on Furrow Irrigation Management

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## DESCRIPTION

Irrigation is an artificial application of water to plants by using gravity or pressure to transport water from the source to the field that the plant needs to fill the soil moisture deficit in the plant's root zone. There are three main types of irrigation systems, namely surface irrigation, subsurface irrigation and pressurized irrigation systems. Surface irrigation is the most common and oldest type of irrigation, transporting water from the source to the irrigated field through gravity. Among the surface irrigation methods, trench irrigation is mainly used in both small-scale and large-scale irrigation systems. But if not well designed and operated, trench irrigation systems can be ineffective due to the complex interplay between field design, soil infiltration characteristics and 'irrigation' water management practices. In most cases, a poorly functioning trench irrigation system is caused by an improperly sized and poorly designed trench irrigation system.

Forms must be suitable for slope, soil type, stream size, irrigation depth, cultural practices and field length. Slope although the trench can be longer when the soil is steeper, the maximum recommended slope of the trench is 0.5% to avoid soil erosion. The grooves can also be flat and thus look a lot like long, narrow basins. However, a minimum slope of 0.05% is recommended for effective drainage after irrigation or excessive rain. If the terrain slope is greater than 0.5%, the trenches can be placed at an angle to the main slope or even along the contour to keep the slope of the trench within the recommended limits. It is possible to draw a trench in this way when the main slope of the ground does not exceed 3%. In addition, there is a major risk of soil erosion after the trench system is breached.

Soil type in sandy soil, water infiltrates rapidly. Furrows should be short be short (less than 110 a), so that water reaches the downstream end without excessive infiltration losses. In clay soil, the infiltration rate is much lower than in sandy soil. Grooves in clay soil can be much longer than in sandy soil.

Stream size normally sizes up to 0.5 l/sec will provide adequate water for irrigation provided the reach the downstream end without excessive percolation losses. When there is a larger stream size, the water will move quickly through the grooves and therefore the trench can generally be longer. The maximum flow size without obvious erosion will depend on the slope of the trench; under no circumstances should a flow size larger than 3.0 l/sec be used. Irrigation depth applying a greater depth of irrigation generally means that the trench can be longer as there is more time for water to flow into the trench and seep in.

Cultivation practices when farming is mechanized, the furrows should be dug for as long as possible to facilitate the work. Short grooves require a lot of attention because the flow must be changed frequently from one trench to another. However, short trenches can generally be irrigated more efficiently than long ones because it is much easier to keep water loss losses low. Field length it may be more practical to make the length of the trench equal to the length of the field, rather than the ideal length, as this would result in a small plot of land remaining.

After production the furrow machine ought to be maintained frequently for the duration of irrigation it ought to be checked if water reaches the downstream give up of all furrows. There ought to be no dry spots or locations in which water remains ponding. Overtopping of ridges ought to now no longer occur. The discipline channels and drains ought to be saved loose from weeds. Furrow irrigation is an inherently erosive process. It is exacerbated via way of means of the want for lengthy fields to growth farming performance and for easy tillage to make sure uniform and constant float of water down the furrow. Soil erosion from irrigation happens throughout whole fields on account of overland float and, from sprinkler irrigation, droplet impact

Soil or silt loss, on the other hand, is a measurement of how much silt is carried by runoff leaving a trench or field as it escapes. The measured soil loss is usually much less than the total area of soil eroded, mainly from the upper trenches, because most of the silt is redistributed and, when runoff is reduced, is often deposited in the upper trench reaches the lower gully before it can leave the field with the flow. Farmers can water too steeply with sprinklers, creating erosion problems because they have exceeded the design limits of their irrigation system. When centre posts with high-volume end guns are placed on mountainous terrain, the combination of high application rates, variable sloping terrain and tower paths can cause severe erosion in a single watering or during a season, especially under external spans.

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