Irrigation: Sprinkler, Drip, Hand Watering Considerations

Drip Irrigation

Pros	Cons
• Targeted / localized application, reduces weed pressure • Keeps plant leaves dry, reduces foliar disease • Requires low pressure, a good fit for low-capacity wells or pumps • Efficient use of water, minimizes evaporative losses • Easy to apply soluble fertilizers (fertigation) • Can be used under mulches (synthetic and natural) • Easy to automate	• Drip lines get in the way of tillage, cultivation, mowers, and other farm tools • Must spend time laying out and picking up drip lines • Upfront cost and labor to install

Sprinkler Irrigation

Pros	Cons
• Uniform coverage, better seed germination • Easy to wet a large area (especially useful before of after seeding) • Fewer pipes and connections, less work to set up, fewer leaks • May not get in the way of tillage, cultivation as much as drip • Uses less plastic, less wasteful • More visible when running, easier to trouble shoot • Easy to automate	• Uses water less efficiently than drip (especially when soil is covered with impermeable mulch) • Wets crop leaves, which can lead to foliar disease • Wets walkways and non-crop areas, which can increase weed pressure • Upfront cost and labor to install

Hand Irrigation

Pros	Cons
• Localized water application • Easy to tailor quantity applied • No specialized set-up needed	• Labor intensive while applying water • Uses water less efficiently than drip • May provide less uniform application • Not automated

Sources: Indiana High Tunnel Handbook, Purdue Extension pg. 33 and The No-Till Organic Vegetable Farm, Daniel Mays pg. 100

High Tunnel Irrigation Examples

A. *A drip tape.* ***B.*** *A lay-flat header line with drip tape lines.* ***C.*** *A drip tape in a larger tunnel.* ***D.*** *A sprinkler irrigation system.* ***E.*** *A header for drip tape attached to a garden hose.* ***F.*** *An irrigation water storage tank with a gravity feed to drip irrigation lines.* ***G.*** *A storage tank for collecting water from a high tunnel roof.*

Source: Indiana High Tunnel Handbook, Purdue Extension

Left: *Drip lines under transplanted kale.* ***Middle:*** *drip lines under landscaping fabric with tomato plant.* ***Pop out:*** *A lay-flat header / distribution line with barb connectors and drip.* ***Right:*** *Drip line under landscaping fabric.*