Hoophouse Soil Preparation

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See the video for Hoophouse Soil Preparation online at www.mifma.org or on MIFMA's YouTube channel.

There are a number of different ways to prepare the soil in a hoophouse that are dependent on farm size, number of hoophouses, and available tools and equipment.

The least expensive and most labor intensive is with a broadfork, claw, and rake. This technique involves lifting the soil as opposed to turning it over (as with a tiller), breaking up larger clods and then forming a seedbed. This maintains better soil structure as compared to the other two techniques. First, the broadfork is used to lift the soil, then the claw is used to breakup larger soil clods, and lastly the rake is used to smooth the bed for seeding or transplanting. Remaining plant material should be removed from the hoophouse prior to using this technique since it will not be incorporated. With permanent raised beds, this is the most common option although a small tiller that can be easily lifted and placed in the beds may also be an option.

A second option is with a tractor and tractor mounted rototiller. Hoophouse doors can be built to allow access for compact and subcompact tractors that can pull 3 to 6ft rototillers. This is the fastest and most time efficient way to prepare the soil for planting in the hoophouse. Using this technique, a 30 X 96ft hoophouse can be prepared in as little as 15 to 20 minutes. This creates a fine seedbed without much soil structure. While this may contribute to soil crusting and erosion in outdoor production, in the protected hoophouse environment with drip irrigation in place crusting and erosion do not occur.

The third option is with a walk-behind tiller or two-wheel tractor. Scale and cost-wise this falls between the above two ways. This decreases the time that it takes to prep the beds and also allows for incorporating any remaining plant material as opposed to pulling it out of the hoophouse. A walk-behind tiller or two-wheel tractor is more expensive than the broadfork technique that uses hand tools only but allows the beds to be prepared much faster. This also is a good option in a situation when tractor access may be limited because a hoophouse has multiple crops but only individual beds need to be prepped. Using this technique, a 30 X 96ft hoophouse can be prepared in approximately 30 to 45 minutes. This does not maintain soil structure as well as the broadfork, but does create a high quality seedbed.

Options and Costs

Broadfork = $200 Claw = $50 Rake = $85	*Tractor = ~$10,000 (plus fuel) *5 ft tiller = ~$1500-2000	*Walk behind tiller = $600-3500 (plus fuel)

* Can be used in other ways on and around the farm to increase efficiency and decrease workload

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