

Manure Injection Recommendations & Considerations



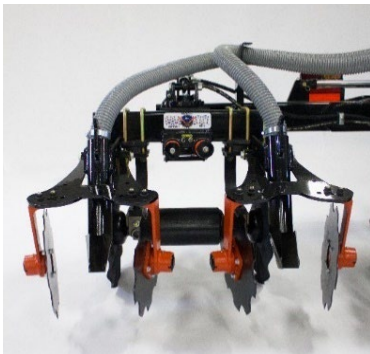
Manure Injection is a conservation practice that has the potential to minimize nutrient runoff from fields, reduce odors, and eliminate or reduce the need for chemical fertilizer applications. This practice may be applied to both grassland and cropland, depending on the toolbar type, field conditions, and field management. There are two common types of toolbars to consider: a toolbar with disc attachments and a toolbar with shank attachments. See page 2 for more specific recommendations for use.

Discs create slots to inject manure into, as on this hayfield.

Disc Injectors

- Used widely in Vermont
- Minimal disturbance (see photo above)
- Most compatible with grassland/no-till systems; reported to best maintain sod and to leave land relatively level
- Best used for applying under 10,000 gallons per acre (GPA)
- Tested on grassland and cropland with reports of success from many VT farms

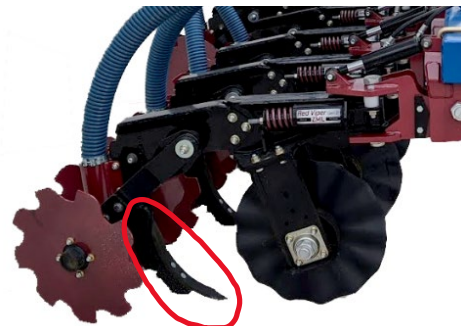
Examples of disc attachment:



Shank Injectors

- Becoming used more widely in Vermont
- Moderate disturbance (see photo pg. 2)
- May not be compatible with grassland/no-till; many farms report needing some tillage after injection to smooth soil surface
- Is capable of applying more than 10,000 GPA if recommended by your NMP
- Used primarily on cropland, may be too high disturbance for grassland

Examples of shank attachment:



Disc models available in the marketplace include the following:

- GEA Hydraulic Disc Injectors ([LINK](#))
- Bazooka Phantom Toolbars ([LINK](#))
- Vertical Tillage Injectors/VTI ([LINK](#))



Shanks fracture soil around the injection slot, resulting in moderate disturbance as shown here on cropland.

Shank models available in the marketplace include the following:

- Puck Dietrich series ([LINK](#))
- Bazooka Dietrich 3-point Injector ([LINK](#))

Considerations when selecting a Toolbar:

- Talk with farmers near you about their experience with manure injection, including the model of toolbar they are using and how their management has changed after injecting.
- Search online to learn more about the discs/shanks/closing wheels on the model that you are considering. ([see example link sharing specifications on different shank attachments](#))
- Get in touch with your local conservation district, UVM Extension specialist, Technical Service Provider (TSP) through UVM Extension, or other trusted entities to discuss your plans.
- Attend a relevant conference to learn more! (For example, the University of Vermont No-Till and Cover Crop Conference often covers manure injection topics each year.)

Implementation recommendations from Vermont farms & local specialists:

- Farmers and specialists say that manure injection is most successful conducted on dry soils.
- Farmers report that injection coupled with dragline can minimize compaction.
- UVM Extension recommends that if your NMP calls for a large volume of manure to be applied, you should consider split applications.
- UVM Extension recommends injecting manure immediately prior to/around the same time as planting to maximize Nitrogen availability to your crop.
- Farmers recommend you consider your whole management system and how injection will fit into your system alongside your other practices.
 - For example, some (but not all) farmers who are implementing injection say that you should plan for an occasional pass-over of your fields with a disc harrow to re-level the surface, even if you are accustomed to no-till.

For further questions or comments:

AGR.WaterQuality@Vermont.gov