

TILLAGE TOOLS – BEST PRACTICES

Leveraging tillage will be a primary defense mechanism at the beginning and throughout the season. Prior to planting, it is important to get the soil bed as level as possible so early forms of tillage via a rotary hoe, harrow, and tine weeder can have good soil contact to eliminate germinating weeds. If you can see weeds, it is too late. Being proactive, preventative, and aggressive is key. Plan on performing some form of tillage every 3-5 days. Consider increasing planting populations to compensate for the many tillage passes.

ROTARY HOE – The rotary hoe is one of the main preventative tillage tools at your access – it's purpose is to remove weeds from non-visible up state up to the white root hair state. If you see weeds a rotary hoe will typically not take them out.

The rotary hoe is designed to be used post-planting, prior to emergence, at emergence, and in early stages of standing crop. The idea cut-off for stopping to use this, would be when you can effectively cover the plant root base with adequate 2-3" soil during cultivation (typically this occurs at 4-5th trifoliolate in soybeans and 4-5 leaf stage in corn).

Best Practices

- Ensure all wheels are free flowing – if not, replace bearings, as needed
- Ensure all spoons on the wheels are not worn
- Keep a few wheels in tractor – if a bearing does go out you have a quick replacement
- Speed is your friend. Optimum run speed is 11-15 mph with and without a crop in ground as it will cause the most disturbance to the soil, which eliminates weeds from developing
- If a field has heavy debris (corn stalks, cobs, etc.) stop every few rounds and clear off wheels
- Check periodically that wheels are free spinning when rotary hoeing a field
- Alternate directions in the field every time you perform a rotary hoe pass
- In a standing crop there will be some leaf matter destruction which will feel uncomfortable, but remember the more aggressive the tillage the better

IN-ROW CULTIVATORS – In-row cultivators come with a variety of different features including side shields, barring off discs, tiller attachments, and various footprints of the actual sweep. Each can be effective if used right.

- The widest footprint with the highest speed you can travel at is the best option. Speed is your friend. For set-up is to find the breakpoint in speed that does not work (i.e. plants are continuously covered by soil) and then back off slightly from there.
- Starting cultivation early most farmers decide to use side shields to enable speed without burying the crop. This is a good idea, but if this is the case, generally with side shields there is a band of approximately 2-3" on each side of the crop that didn't have the soil disturbed. If soil is not disturbed, then that is a prime chance for weeds to grow. Therefore, post early cultivation it is highly recommended to also interlace applications of rotary hoe (if you don't see weeds developing) and or tine weeder (if you do or don't see weeds developing). Side shields are not necessary, but adjustment of speed might be required in early passes to not bury the crop.
- The first cultivator pass for the season should be performed with a goal to loosen the soil

- The second cultivator pass should be performed with a goal to throw soil towards plant root base.
- The sweep foot print should build over time. Be as aggressive as possible. It is not out of the question to use sweeps as wide as 24-27" in 30" row spacing.
- When you are confident that there is not a flush of weeds at the root base and you can adequately throw approximately 2"-3" of soil at the plant root base to completely disturb and cover the soil near the root base, then graduate to cultivation passes only every 7-10 days.
- If set-up with hillers, drop those as soon as possible where you can maintain good travel speed.

TINE WEEDERS – Tine Weeders are one of the main preventative tillage tools at your access – it's purpose is to remove weeds that are at non-visible to weeds that are just emerging, which offers a bit more flexibility compared to the rotary hoe. The Tine Weeder is designed to be used post-planting, prior to emergence, at emergence, and in early stages of standing crop. As with the rotary hoe, the ideal cut-off of point is when you can effectively cover the plant root base with 2"-3" soil during cultivation. Typically, this occurs, at 4-5th trifoliolate in soybeans and 4-5 leaf stage in corn.

Best Practices

- Set up is more of an art than a science.
- The tine weeder is most effective with the soil is loose and not cloddy. If the soil is not loose, perform a rotary hoe pass first before utilizing the tine weeder.
- When crops have not emerged, you can travel at speeds of 10mph and above; however, when crops are emerged it is recommended to travel at 2-4 mph.
- If field has heavy debris (corn stalks, cobs, etc.) stop every few rounds and clear off tines
- Alternate directions in the field every time you perform a tine weeder pass
- Use caution with standing crops. In standing crops there will be some leaf matter destruction which will feel uncomfortable, but remember the more aggressive the tillage the better.