

THE LEADING EDGE

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A PUBLICATION DEDICATED TO MAXIMIZING YIELD POTENTIAL

Clearing up the Coulter Confusion

Which coulter or combination of coulters works the best? You could ask your neighbors for their opinion on the best arrangement, but chances are they've only had the opportunity to run and compare just a few different coulter setups. Experimenting with different systems is the best way to go, this provides the opportunity to see many different coulter arrangements head-to-head in the same conditions.

To create the perfect seedbed the right combination and selection of coulter blades is essential. The impact of coulter blade selection on emergence and root development is clearly demonstrated by the corn seedlings in the following photos.



Photo A

Note:
Both corn seedlings were planted the same day, time and manner in the same conditions.



Photo B

Photo A on the left was planted with a row cleaner only and Photo B on the right was planted behind a row cleaner and coulter combination. Clearly the benefit of coulter tillage is demonstrated by the well-developed seedling. Photo A the seed trench is still visible but Photo B the seed-to-soil contact is ideal and notice how the soil directly around the seedling is fractured for excellent closure.

The following three scenarios are typical coulter set-ups for seeding equipment:

One coulters mounted directly in front of the planter or drill opener slices through residue cutting a narrow slot, leaving the surrounding soil relatively undisturbed. **Two** coulters working in conjunction prepare a mellow planting strip. These coulters are usually staggered front to back and run off both sides of the row. Loose soil created by the churning action of the coulters improve seed to soil contact plus aids in closing the seed trench. **Three** or more coulters mounted in line with the planter openers provide maximum lifting and fracturing of the soil. In addition, two coulters mounted with a residue manager prepare the soil for premium seed placement.



Typical multi-coulters planter set-up.

Choosing the right coulters blade to match soil conditions is as important as how many coulters are used. The following is a good rule of thumb for coulters blade selection.



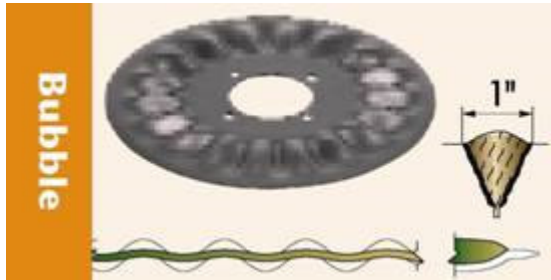
Features:

A Ripple blade penetrates easily into the ground, tilling a narrow slot. Its saw-tooth edge is self-sharpening, cutting through residue only where you need it while leaving the surrounding soil relatively undisturbed.

Conditions:

Ripple blades have a tendency to throw less soil, working best in conditions where very little tillage is needed. Recommended

in damp and sticky conditions and heavier soil types.



Features:

A Bubble blade tills more aggressively as the bubbles enter the uppermost level of the seedbed. The straight edge of the blade is sharp to easily cut through tough conditions, opening a path ahead of the seed slot

Conditions:

Bubble blades tend to work well in sandy soil as well as dry conditions with thick stalks. Recommended in dry sandy or coarse soil.

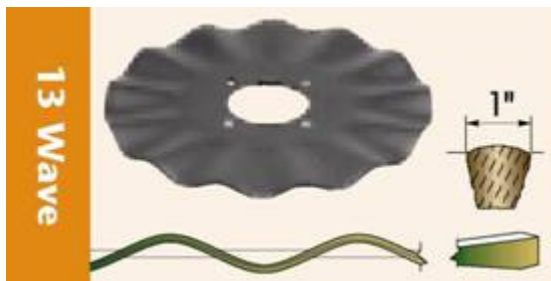


Features:

An 8 Wave blade offers less soil tillage and more soil fracturing with a little wider seed trench at higher speeds.

Conditions:

8 Wave blades work well on coulters carts for drills or planters operated faster than 6-1/2 mph. Recommended in lighter soils.



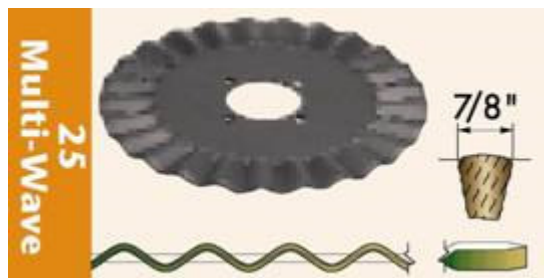
Features:

A 13 Wave blade gives you more aggressive soil disruption at slower ground speeds. This popular blade will take smaller bits and throw less soil than the 8 Wave even at higher Speeds. It will work the soil more evenly at lower speeds, tilling a wider slot filled with a fine tillth.

Conditions:

13 Wave blades work well on drills and planters.

Recommended operating speeds range from as slow as 4 ½ to 5 mph to as fast as 7 mph.

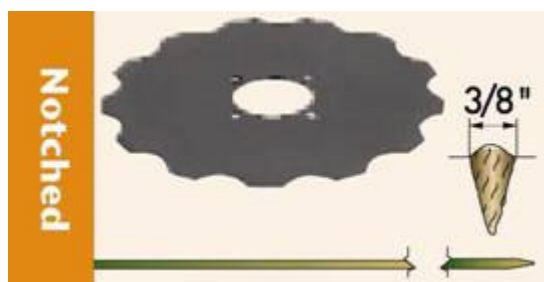


Features:

A 25 Multi-Wave blade is a depth sensitive and ground speed sensitive blade that makes an extremely fine tilth. Its edges are narrow and sharp enough to cut through tough crop residue but still aggressive enough to create plenty of loose soil for the closing wheels to close the seed trench. A multi-wave coulter works the soil more thoroughly than a ripple or bubble.

Conditions:

25 Multi-Wave blades can be used in a variety of soil types. They work extremely well on wet or spongy soils that have a tendency to be tight and hard for the planter wheels to close.



Features:

A Notched blade is used with a side profile knife for placement of dry or liquid fertilizer. Its 13 notches easily slice through residue and leave a very narrow slot in the soil with little or no soil disturbance.

Conditions:

Notched blades work well in most any conditions and any speed. Recommended for no-till and minimum tillage applications.

Ripple coulters are usually the best choice for good soil penetration without disturbing the soil. Using the wavy coulter directly in front of the planter units gets the residue out of the row. This helps fracture

and warm up the soil ahead of the planter units, which improves seed placement.

While there are differences in the residue cutting abilities of coulters, the size of the coulters blade and the speed at which it runs will determine its effectiveness.

Basically, the wider a coulters blade is, the more it is affected by ground speed (the faster you go, the more aggressive it gets). Wider coulters also provide more tillage and disturb more soil – especially when the soil is wet.

For wavy coulters used with planters, the more waves on the blade, the slower the ground speed it should be ran. Coulters with more waves work the soil more aggressively and could have a tendency to throw more soil out of the seed trench at certain ground speeds.

By design each style of coulters blade offers different degrees of aggressiveness and soil disruption. Regardless of blade choice or number of coulters, when it comes to improved emergence and root development some type of coulters tillage is better than none. The difference between seedlings in photo A & B is iron clad proof.

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