

# Take A Break, Check Your Planter

**Neville Gould**

With today's modern planting monitors, keeping tabs on planter performance is easier than ever before; however, it doesn't hurt to take a break to do some double-checking, says a CANFA CEO and agricultural engineer Neville Gould.

Mr Gould says taking field breaks reduces operator fatigue and stress, which can distract from safely operating equipment. Plus, a walk around the planter can also give the operator a chance to ensure the planter is operating normally.

## **Planter Levelness**

An improperly levelled planter can inhibit the action of the row unit's parallel-bar linkage, potentially leading to non-uniform seeding depth. The same applies for rigid tined machines, especially with 5-bar machines where tines are spread over a large distance.

"The planter's tongue and the row units' parallel-bar linkages should be nearly level, or parallel, to the ground," Gould says. "Symptoms of an unlevel planter can include inconsistent seed spacing and depth. A severely unlevel planter may have difficulty closing the seed furrow. Another clear sign is seeds on the surface of some rows."

The easiest way to check is by performing a run, coming to a stop and putting the hand brake on to ensure the tractor does not roll back. Get out and check the height of the frame in each corner of each section or wing to ensure they are the same.

## **Down Force**

Many planters have springs, hydraulic rams or air bags in the parallel-bar linkage, which transfer weight from the planter's frame to the row unit to help with disc or tine opener, residue clearing or cutting coulter penetration and to minimize unit bounce in rough soil conditions, Gould says.

"Row unit down force should be adjusted when adding or removing row unit attachments, if there is a significant change in soil conditions like texture, moisture or tillage, or if the row units are bouncing when planting," he says. "Pay particular attention to row units that follow in tractor tire tracks as they may require additional down force. Be careful to not overload the system in controlled traffic situations as well where soils are getting much softer."

Gould says too little down force can result in row-unit bounce and, subsequently, shallow seed placement. However, too much down force could accelerate wear on the row units' ground-engaging components and could negatively affect early plant development.

Wet planting can also create problems; reduce the down pressure particularly with disc systems with adjacent depth gauging wheels.

## **Row Cleaners**

Row cleaners, trash wheels or trash whippers must be adjusted to just touch the ground, Gould says. Row cleaners adjusted too high will not rotate and will leave residue in the path of the opener. Adjusted too low and they may move too much soil, which could affect seeding depth and cause the seed to be planted in cool, damp soil.

"Long residue can wrap around the row cleaners," Gould adds. "In this case, a lead coulter may be needed to cut the residue before it can be moved out of the way by the row cleaner."

## **Tire Pressure**

On planters ground-driven by a pneumatic tire, tire pressure should be checked daily. Gould says these planters use the tire for ground driving the seed, fertilizer and chemical metering systems. Therefore, the tire needs to be properly inflated to ensure the same tire diameter used to create the rate charts in your operator's manual.

"An under-inflated tire will reduce the gear reduction of the drive, leading to a higher seeding or fertilization rate as the tire makes more rotations for each meter of ground covered," Gould says. "The opposite is true for an overinflated tire."

Tire inflation is also extremely important with depth control and also inter-row seeding situations. Unevenly inflated tires will not only cause uneven section or wing heights but may also cause uneven drag, causing the planter to crab down the paddock, making it difficult to plant into the inter-row space.

## **Checking Seed Population and Placement**

To check population and placement, pick a couple of row units to monitor for a repeated measurement. Release the closing wheel down force and use a chain or strap to restrain the closing wheels so they don't touch the ground, Gould says.

"Then plant long enough so that you have a chance to get the planter up to speed. This may require planting a little farther than desired, but it will ensure the observed population will be representative of the rest of the field and will also give a more representative position of seed location." "If you are not travelling at the normal planting speed then soil flow can be altered and could affect the seed position in the furrow, especially with tine machines".

## **Planting speed**

Gould says manufacturers have worked to design planters to operate at higher speeds, but seed singulation and depth control still become more difficult at higher planting speeds.

"I'm not advocating slowing down, but if you're not happy with the performance of your planter, slowing down a bit is an easy way to potentially improve planter performance," he says.

Most metering systems, especially summer crop precision planters, were designed to operate ideally at 8 kmh and whilst the openers can operate at higher speeds, the seed distribution and placement can sometimes be compromised at these higher speeds.

On tine machines, soil flow and closure behind the point is altered by operating speed and quicker speeds generally lead to increased seeding depth if the sowing tubes are not positioned correctly. Higher draft and fuel consumption also result but as importantly soil throw can be also increased. In friable soils this may not be a problem but in tight soils, this may leave the seed exposed in the furrow or provide poor seed-soil contact if a suitable presswheel is not used.

## **Presswheel Type and Pressure**

"The choice of presswheel for your planter can be one of the most important decisions a farmer can make" says Gould. The presswheel should be of a shape that matches the zone of disturbance

