WIND DAMAGED MAIZE CROPS

In some seasons wind can do considerable damage to maize. The worst affected crops are either broken below the cob or are completely flat on the ground. In determining what to do with crops, it is important to establish the stage of crop development, how much of the paddock is affected, and how bad the damage is.

Severely lodged maize may be daunting to evaluate immediately after a significant wind event. As result it is recommended that a more critical assessment is delayed at least four days to enable lodged plants to produce visual signs of whether or not they may recover (Nielsen, 2013). Depending on the stage of crop development this could include plants beginning to turn upright, re-orienting leaves, or pollinated ears continuing to fill some of the established kernels.

Please remember that that the Pioneer Team is committed to assisting growers who are dealing with the complexity of these situations in order to achieve the best possible management solutions for crops compromised by lodging.

Leaning plants with or without bent stems

The impact on yield and rate of crop maturation will be determined largely by how much the crop is leaning and the degree of disruption to the roots and/or stems. Maize that still has reasonable plant-to-soil contact and stems that are bent (also known as goose necking) but still able to transport water and nutrients should mature, but at a slower pace than unaffected plants.

It is recommended that paddocks with extensive leaning plants are not taken through to grain harvest due to the risk of plants falling over completely and the development of cob disease.

Crops which are still several weeks from silage harvest maturity (30-38% drymatter) may eventually need to be harvested early to capture as much of the value in the crop as possible and to allow timely regrassing or winter crop establishment.

Where maize is leaning very badly (>30 °), shading of the leaves will have a major influence on plant photosynthesis. In the worst-case scenario plants will eventually shut down and die as they are unable to supply carbohydrates required for kernel growth.

Monitor crops on a regular basis checking for further wind damage and any signs of plant death.

Plants broken above the cob

Stalk breakage above the cob will result in some yield loss. Crops should be left to mature, although those which are still several weeks from silage harvest maturity (30-38% drymatter) may eventually need to be harvested early to allow timely regrassing or winter crop establishment. When harvesting wet maize silage keep the chop length long (20 mm) and avoid over compaction. Ensure that any leachate from the stack or bunker is contained.

Plants broken below the cob or flat on the ground

Crops which are either broken below the cob or are flat on the ground will result in all or a substantial part of the plant dying. Kernels on the ears (cobs) of such plants will likely abort due to loss of photosynthetic capacity. As a result, yield and quality are significantly affected depending on the stage of development.

Crops should be monitored carefully and harvested when they are greater than 28% and preferably at least 30% whole plant drymatter. This reduces the risk of effluent run-off from the silage stack and increases the chance of a good fermentation. **Please note:**

where crop damage is significant, crops may reach this drymatter level within a few days of wind damage.

When harvesting maize silage crops where some or all the plant material is on the ground

- **Keep the harvester speed down and harvest in the opposite direction to which the plants are lying.** This will increase the amount of material that is picked up off the ground.

- **Ensure that chop length matches crop drymatter content**. Wet crops (<30% drymatter) should be chopped at 20 mm theoretical chop length to reduce the risk of run-off from the silage stack.

- **Inoculate with Pioneer® brand 11C33RR maize silage inoculant.** Maize silage made from soil-contaminated crops is particularly susceptible to poor aerobic stability. (Aerobic stability is a measure of how long silage remains cool and retains its quality after the stack is opened at feed-out time). There is also an increased risk of heating with immature crops due to high sugar levels. Inoculating with 11C33RR will improve fermentation quality and reduce the risk of heating at feed-out time. 11C33RR provides less heating and stable feed in 7 days from ensiling.

- **Employ good harvest and stack management techniques.** Ensure that the material is harvested as quickly as possible. It should be well compacted and sealed. Careful feed-out management (e.g. keeping the stack face tight at feed-out time is also critical.

- **Watch out for high nitrate levels.** Early harvested maize crops carry an increased risk of high nitrate levels. This has animal health implications and, in rare cases, can also increase the risk of silo gas. Stay away from your stack and contact your local Pioneer representative if you detect a red-brown or yellowish-brown gas, a strong smell of bleach or see dead grass around your silage stack area. Always test early harvested crops for nitrate levels prior to feeding.

Feed value of maize silage made from wind damaged crops

The feed value of maize silage made from wind damaged crops will vary depending on a number of factors including the stage of crop maturity at harvest time, the cutting height and the amount of plant material left in the paddock. Typically, the energy content is lower and the crude protein may be higher.

It is recommended that a representative maize silage sample is taken 30 days after harvest and sent to a commercial laboratory for feed analysis. Your local Pioneer Representative can help you to interpret the results and can also provide feeding recommendations.

For more information call Pioneer on 0800 PIONEER (746 633) or visit www.pioneer.nz

References

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