

Rolling of grains to prevent winter kill damage

Problem

Extreme frost in cold winters can lead to soil movements that cause tears in plant roots and the hypocotyls of the grain. This makes growth more difficult in spring and makes the grain very susceptible to a lack of moisture up until the 3-leaves growth stage. This results in crops with gaps.

Solution

Rolling the grains in spring reconnects soil crumbs with the soil and supports the soil water capillarity and water availability in the topsoil.

Outcome

The pressure of the roller stimulates not only the formation of roots and improves access to water, but stimulates also the tiller of the grain increasing its stability and thus reducing the risk of falling over.

Applicability box

Theme

Crop-specific measure

Geographical coverage

In regions of wheat and other winter cereal cultivation

Application time

After the last frost in spring when grains start to shoot.

Required time

One pass with a roller.

Period of impact

Current crop

Equipment

Corrugated roller (cambridge roller) or a smooth roller

Best in

Wheat and other winter grains

Practical recommendation

- Rolling requires dry soil in order to prevent the soil from sticking to the roller and ripping out the plants (especially when using smooth rollers).
- The corrugated roller must not damage the plants too much. Take special care when using sharp-edged rollers.
- Every mechanical interference puts the plants under stress. For this reason, it is advised to go at a maximum rolling speed of 5 km/h.

Notes

- Even in densely sown or strongly fertilized spelt crops, the rolling is recommended. It weakens the main shoot and increases growth on side shoots, which improves the stability of the plants at the expense of longitudinal growth. Spelt is often rolled later (up until the 1-node stage) and more aggressively than winter wheat.



Figure 1: Rolling winter wheat (with corrugated roller in the photo) is supporting seed-soil contact and stimulates tillering.
(Photos: www.gut-derenburg.de)