

Contains 700 g/l (42% w/w) total Zinc as zinc oxide

BVR Zinc700 Technical User Guide

- Zinc is an important component in the production of plant proteins and hormones such as auxins (essential for growth).
- Zinc activates enzymes in protein synthesis and is involved in the regulation and consumption of sugars
- Zinc is necessary for starch formation and proper root development.
- Zinc influences the rate of seed and stalk maturation.
- Zinc is necessary for the formation of chlorophyll and carbohydrates.
- Adequate tissue Zinc enables the plant to withstand lower air temperatures
- Deficiency can lead to both severe yield and quality penalties.

Zinc deficiency

Moderate to severe zinc deficiency in crops is induced by;

- Sandy Soils with a high pH
- Zinc: Phosphate Balance: High levels of soil phosphate are commonly responsible for zinc deficiencies.
- Nitrogen Stress: Low nitrogen availability decreases the vigour of plants to an extent that it may fail to take up adequate amounts of zinc.
- Zinc: Copper Balance: Plant roots appear to absorb zinc and copper by the same mechanism. This causes interference in the uptake of one when the other is in excess in the root zone.
- Zinc: Arsenic Balance: High levels of arsenic in the soil, as often found in old orchard soils, can seriously inhibit zinc uptake.

Zinc deficiency has only very occasionally been encountered in top fruit, forestry nursery stock and cereal crops in England. Symptoms are much more common in Ireland and Scotland. The preponderance of soils maintained at high pH in Ireland may be one explanation of this. Zinc availability is lower in these situations due to a reduced solubility under alkaline conditions.

Symptoms of zinc deficiency

Plants suffering from zinc deficiency may show interveinal chlorosis with pale green, yellow or even white affected areas. Deficiency in cereals is most noticeable in the early stages of plant growth, with yellow streaks appearing at the second leaf stage (GS12). Growing points of deficient cereal plants die leading to stunting. Symptoms are more pronounced in barley than in wheat or oats - the entire leaf margin may become bleached. In barley, well-developed ears may be distorted with twisted, wavy awns whilst other ears may be blind.



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Zinc deficiency (L – R) in wheat, apples (little leaf symptoms) and maize

Yield response to BVR Zinc700 application

Zinc deficiency in cereal crops was first identified in northeast Ireland in 1985. Foliar applied zinc significantly increased the yield of spring barley by 70-288% at sites where deficiency symptoms were observed early in the growing season.

Sites with only slight or moderate Zinc deficiency in Ireland have given yield responses of 5-10%.

Treatment with BVR Zinc700

<u>Crop</u>	<u>Rates and Timings</u>
Winter Cereals	Apply 0.5 – 1 l/ha from early tillering to second node stage (GS14 – 32) with a follow up treatment at flag leaf visible (GS39) For autumn-sown crops, the first application should be made prior to winter dormancy.
Spring Cereals	Apply 0.5 – 1 l/ha at 4-6 leaf stage (GS14 – 16) with a follow up treatment at the first node detectable to flag leaf visible stage (GS31 – 37)
Oilseed rape	Apply 1l/ha October/November before winter dormancy. Repeat in the spring at the start of stem extension.
Sugar beet	Apply 1l/ha from the 4 - 6 leaf stage
Root vegetables	Apply 1l/ha from the 4 - 6 leaf stage
Potatoes	Apply 1l/ha from 1 week after 100% emergence. Where there is a severe deficiency repeat after 10 – 14 days
Peas and Beans	Apply 1l/ha from the 4 to 6 true leaf stage.
Maize	Apply 3-5 l / ha before or after sowing. Apply 0.5 l / ha at 6-8 leaf stage, (application is possible at any time during the 4-10 leaves)
Top Fruit	Apply 1l/ha post petal-fall.
Other Crops	Apply 1l/ha as early in the growing season as possible providing there is adequate leaf cover.

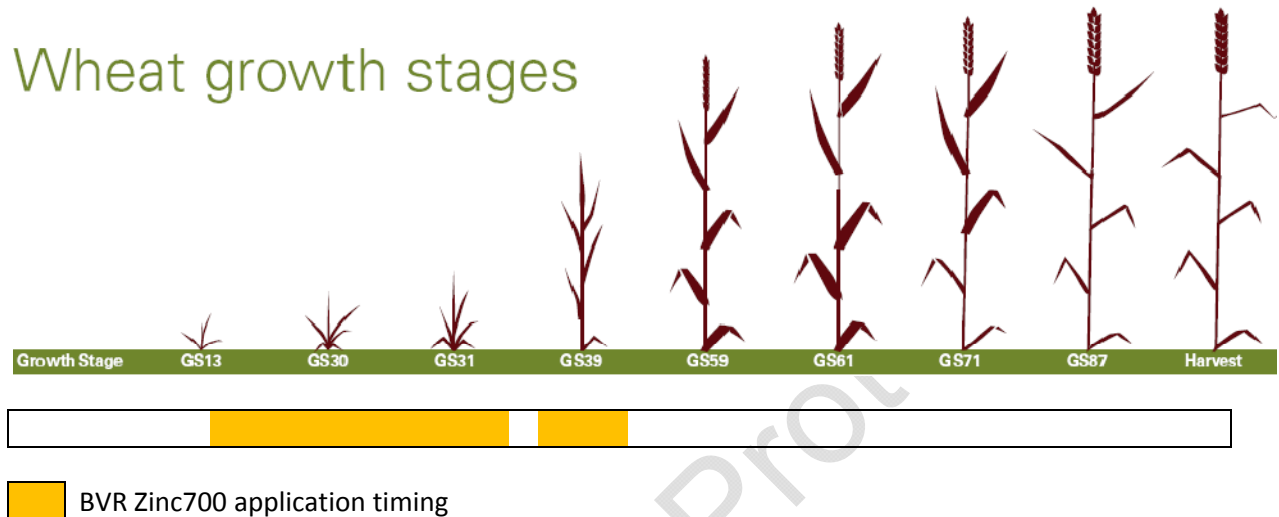


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BVR Zinc700 Treatment Timing in Winter Cereals

Wheat growth stages



Special Notes

- A crop's nutrient status can only be determined accurately by tissue analysis. Barclay Crop Protection recommends that tissue analysis results are used whenever possible to optimise applications
- Only to be used where there is a recognised need. Do not exceed the appropriate application rates.
- BVR Zinc700 is physically and chemically compatible with a wide range of agrochemical products. The BVR Zinc700 tank mix guide is available from your distributor or from Barclay Crop Protection.
- BVR Zinc700 is incompatible with phenoxy herbicides e.g. mecoprop-p, MCPA, 2,4-D, bentazone and dicamba, and mixtures containing such herbicides, and some formulations of flurtemone.



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