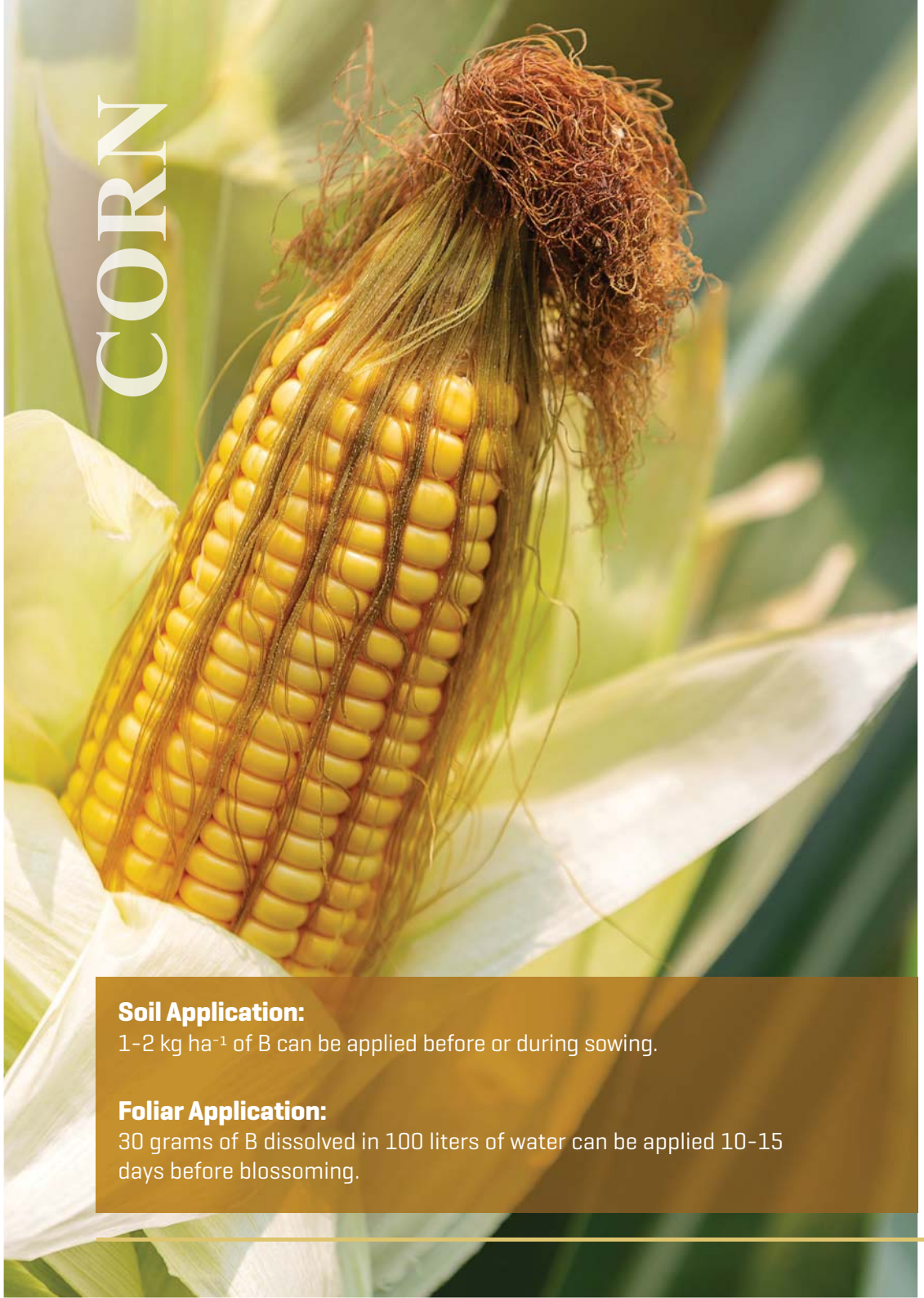


Soil Application:
1-2 kg ha^{-1} of B can be applied before or during sowing.

Foliar Application:
30 grams of B dissolved in 100 liters of water can be applied 10-15 days before blossoming.

CORN

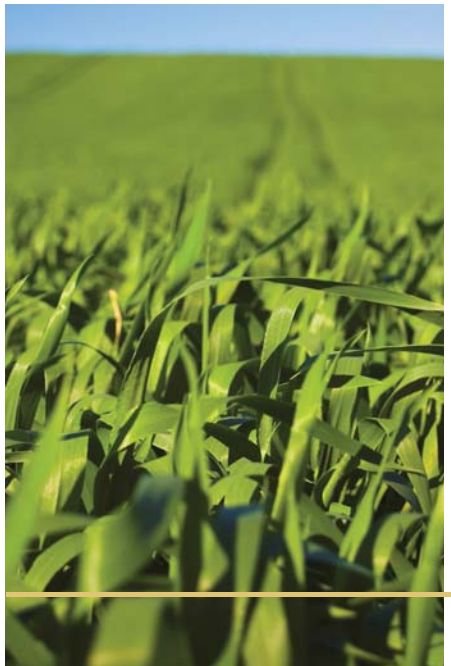
Corn plant is produced on an area of approximately 200 million hectares in the world. When the mineral nutrition studies on the corn plant are examined, it is revealed that boron deficiency is an important nutritional problem affecting the development and yield of corn. In fact, corn is a plant with low boron requirements, but boron has a determinant role on the generative organs of corn and pollination (fertilization), thus it affects the yield. Due to its low boron requirement, maize is very sensitive to high boron concentration. Despite the low boron requirement, it is reported that boron applications in field conditions in many countries of the world cause significant yield increases in corn. Similar positive results were obtained and reported in Turkey.

In case of boron deficiency, there are research findings indicating that there are problems in the development of green parts and roots, the formation of corn tassels, the transportation of sugar from the leaves to the corncob, the development of pollen tubes and the formation of seeds. It is reported that boron deficiency symptoms are generally not seen in the vegetative period of corn, but seen at the beginning of the generative period. However, as can be seen in the experiments carried out under controlled conditions, if there is severe boron deficiency in the feeding environment, important problems arise in the growth of the plants in the early development period. In case of boron deficiency, there is a strong decrease or even a stop in green parts and longitudinal growth. There is a significant decrease in the growth between the nodes (between the leaves on the stem) and the plant has a scrub appearance. With the emergence of a strong decrease in longitudinal growth, the leaves seem to be gathered in one spot. In fact, as a result of severe boron deficiency, new plantlets appear on the side in corn, such as tillering in wheat. However, such growth problems are not observed in the growth and elongation of green parts of plants feeding with sufficient boron under the same conditions.

In corn, the first noticeable boron deficiency symptoms appear primarily on young leaves. White and elongated stripes are seen on young leaves. As the deficiency becomes more severe, it is observed that the white stripes in question gradually expand, lengthen and appear in a transparent irregular manner. Such leaf boron deficiency symptoms are frequently found in the literature and are reported to be seen in plants growing under field conditions.

In plants under severe boron deficiency, as the longitudinal growth comes to a stoppage point, there is also undesirable multi-cob formation, similar to the development of new plantlets. It was observed that the cobs grown under the same conditions with sufficient boron application show a normal development.

The presence of 4 to 25 mg kg^{-1} boron in the corn cob is considered to be sufficient boron concentration for corn. In some studies, the presence of 3 to 5 mg kg^{-1} boron concentration in organs such as cob leaf, tassel and corn cob in corn plant is seen as a sign of boron deficiency. Boron deficiency shows very important effects on the reproductive organs such as pollen sac (anther), pollen and especially pistil of corn plant. As the effect of boron deficiency on the corn cob is more severe than on the tassel, it is thought that abnormal cob formation occurs from time to time in boron deficiency. For this reason, due to the high effect of boron deficiency in corn cob, it is recommended to apply foliar boron during or just before the corncob development. The most recommended dose of boron applications made from soil is 1-2 kg ha^{-1} boron.



As outlined above, the corn plant is very sensitive to boron toxicity, and toxicity symptoms are generally seen in corn as yellowing and necrosis on the edges and tips of old leaves. However, such leaf symptoms are very similar to the toxicity symptoms of other elements. It even resembles the symptoms of potassium deficiency. Therefore, the level and severity of boron toxicity should be confirmed by leaf analysis.

Boron toxicity is a problem that can be seen in many plants, especially cereals, in alkaline soils and in arid and semi-arid regions irrigated with irrigation waters containing excess boron. In addition, the use of fertilizers containing boron at high rates for several years in a row also leads to boron toxicity. Depending on the conditions, boron values above 25 to 50 mg B kg^{-1} on the leaves of the corn plant should be considered as values that may cause boron damage to the plant. Soil analysis must be done before boron fertilization to determine the boron needs of the soil.