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## PLANT NITROGEN DEFICIENCY - GOT SYMPTOMS?

**Getting N management done right is always a challenge.** Too much N fertilizer can lead to problems with harvesting and quality. Excessive N also can pose a challenge for the environment. Adding too much N fertilizer also wastes money.

**If the N supply runs out too soon during the growing season, serious problems of decreased yield and harvest quality are common.** If the N shortage is severe, deficiency symptoms are seen as:

**Plant Stunting** – Nitrogen is essential for cell division and enlargement. When it is lacking, plants will be shorter than usual and the leaves may be smaller. Maturity may be delayed too.

**Yellowing** – The green pigment in leaves is from chlorophyll. A N shortage will cause a lack of chlorophyll and leaves become yellow.

**Older tissue affected first** – When there is an N shortage in the plant, the N-containing compounds in the older tissue break down and move to the younger leaves. This causes the N deficiency to become first noticeable in the tips and margins of older leaves. With a severe deficiency, the entire plant may appear chlorotic.

**Protein loss** – Many crops have less visible N deficiency symptoms, such as lower protein content and less plump seeds—factors that do not become obvious until after harvest.

**These obvious symptoms of low N may not be noticeable until the deficiencies become severe.** However hidden nutrient shortages will damage plant performance even with minor deficiencies. The loss of yield and quality begins even before the deficiencies are observed.

**Take advantage of all the tools at your disposal to get N management right.** This varies between regions and crops, but it always involves careful monitoring in the field. This may involve soil testing, plant tissue testing, crop monitoring, realistic yield goals, adjustment for weather conditions, and in-season fertilization.

**Sometimes plants do not respond to additions of N as you might expect.** Consider factors such as the cultivar, available soil N, delayed crop development from late seeding, excessive weed competition, insect and disease infestation, and low soil moisture when making fertilizer applications. Make sure that added N fertilizer will get to the plant roots.

**Balancing N fertilization is like keeping a teeter-totter level.** Running out of N too early can be a disaster for crop growth. Adding too much N causes wasteful losses. Constantly adjusting nutrient inputs requires skill and experience. Using a Certified Crop Adviser to help with these decisions usually makes a lot of sense.

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Abbreviation: N = nitrogen.