



Drought and Nutrient Management: Looking Ahead

Has there ever been a year when every farmer received just the right amount of rainfall at the optimum time for crops throughout the growing season? Probably not, and it will likely never happen.

If your area was hit by drought last season, what adjustments are needed the next year? The total impact of a dry year usually cannot be assessed until well after harvest. Yet, experience can help guide management decisions to boost crop yield opportunities for the new crop.

Here are some things to think about:

- Yields of drought-damaged crops grown under conditions of good nutrient availability will be higher than those where fertility levels were poor.
- Crop response to adequate fertilization is good in times of moisture stress. Yield increases may actually be greater than when growing conditions are optimum.
- A good fertilization program helps stretch available moisture into more yield. Adequate soil fertility stimulates root development... deeper root growth and more complete soil exploration...which improves the utilization of available soil moisture.
- Nutrient carryover due to drought may not be as great as many will estimate. If drought-damaged crops are harvested as hay or silage, nutrient removal will be greater than for grain crops, even if yields are lower than normal.
- Soil testing is necessary to determine where investments need to be made for the next crop.
- Soil compaction increases drought damage. Now is the time to look at fields and find where compaction has increased moisture stress. Plan

to correct this problem for the next crop. Higher nutrient levels help plants cope with compaction. Starter fertilizers have been particularly effective on compacted soils.

- Nutrient deficiencies, particularly potassium (K), are more common under drought-stressed conditions. Moisture stress lowers plants' abilities to take up nutrients and makes higher fertility levels more important than ever.
- Good crop management pays, even under stress conditions. Crops grown with high soil test levels of phosphorus (P) and K where adequate applications of fertilizers have been made are better able to tolerate heat and moisture stress.
- High P availability helps young seedlings establish a good root system early in the season and better cope with moisture stress.
- High levels of available K improve water use efficiency because losses of water from leaves are reduced and because healthier root systems are able to extract more moisture from the soil.
- Adequate soil fertility speeds crop maturity and can help a crop pollinate before likely periods of moisture stress set in.

- Drought underscores the fact that nutrient applications in many areas have not kept pace with nutrient removals in recent years when yields and nutrient removals were high.
- Good management shines, even in dry years. Combinations of good levels of soil fertility, use of adapted hybrids of varieties, early planting, use of moisture conserving tillage systems, and good weed control all help improve water use efficiency.

Remember: Fertility pays off in a marginal year. There's no doubt about it. That's when roots need all the help they can get.

Summary

Cash for inputs may be short this season, so soil testing will tell what is needed to make the best crop for the money. Avoid making the mistake of doing nothing. Don't apply too little fertilizer or more than is needed, especially when finances are tight. Needed fertilizer is a good investment, returning 3, 4, or more dollars for each dollar invested. Don't be short on this critical input when the crop needs it. ■

For Further Information

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