

High Yields in 2003... a Product of Nature and Nurture

By P.E. Fixen

Those of us privileged to be part of crop production agriculture typically experience about 40 growing seasons in the core part of our professional careers. Certain seasons serve as benchmarks that we use to index all other seasons. For many corn growers, both producers and researchers, 2003 was such a benchmark because of the high yields experienced. These seasonal differences are products of nature...what nature provided in terms of growing season length, precipitation amount and distribution, solar radiation, day and nighttime temperatures, absence of “acute stress” such as hail or wind storms, etc. However, the impact of these products of nature can be greatly influenced by how we nurture the crop. What we reap is clearly a product of both nature and nurture.

On-going Midwest studies designed to learn how to produce the highest corn yields attainable in a specific environment generated interesting data under 2003 growing conditions. The following four brief accounts (on pages 17, 18, 19, and 20) feature some of these studies. Future issues of *Better Crops* will contain more information on individual research projects. In this section, we focus on specific lessons illustrated in the 2003 season and on an exciting development in the science of crop modeling that promises to markedly improve our ability to determine the attainable yield potential at specific sites. In other words, stay tuned to future issues because there is more to come. **BC**

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relations, cell wall formation, and energy reactions in the plant. When required, K should be applied pre-plant or after onions progress past the 4-leaf stage to avoid problems associated with excessive soluble salts, since onions are very sensitive to water stress during the seedling stage and during bulb growth.

Substantial amounts of other essential nutrients...especially calcium (Ca), sulfur (S), and magnesium (Mg)...are also rapidly accumulated during the growing season. They must be available in adequate quantities to supply the rapidly growing crop. Due to the shallow nature of the root system, these nutrients must be present in relatively large amounts in the surface soil.

Soil testing is the best way to monitor the nutrient status of the root zone.

Conclusions

Onions are widely grown across North America. Research from the Pacific Northwest shows that onions are very responsive to nutrient applications. Proper nutrient management results in larger and more profitable onion yields. **BC**

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