This book argues for better soils and better crop management. This book is based upon five claims:

1. The gap between average crop yield and what better growers are getting can be filled. This goal is number one.

2. Even the gap between yields of better growers and record yields can become more narrow. This is goal number two.

3. These goals can be largely met with creation of better soil and with more attention to management details. The use of the concept of the Law of the Maximum will be essential.

4. The goals can be met without new breakthroughs in plant biology. Such advancements, however, will be welcome.

5. The principles outlined can also be used for very small-scale agriculture as well as for large-scale agriculture. Slight modifications may be necessary for some.

Cooke (1979) said, "I believe that work to establish the reasons why average yields are so much less than accepted potentials of the crops grown should have the highest priority in research intended to improved agricultural production; it is also the most certain way of producing extra food" (page 67).

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September 2003

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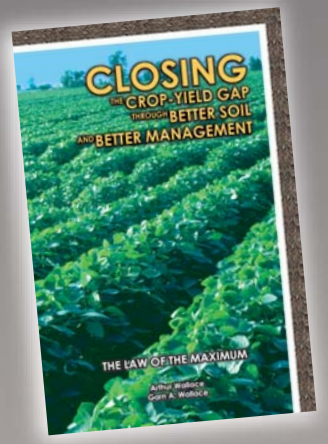
Closing the Crop-Yield Gap Through Better Soil and Better Management

The Law of the Maximum

Arthur Wallace
Garn A. Wallace



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Some Record Crop Yields in North America

Crop	Yield
Alfalfa	24.1 tons/A
Barley, spring	190 bu/A
Canola, spring	70 bu/A
Corn	444 bu/A*
Cotton	5.4 bales/A
Soybean	118 bu/A
Wheat, winter	205 bu/A

*It is important that each year, Frank Childs has a higher record yield (page 9).

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Law of the Maximum: The largest net response to a given input comes when there are no remaining limiting factors. A corollary is that the magnitude of response to an input increases as more and more limiting factors are corrected (page 32).