

Revisiting the gap between actual and potential crop yields

Fereres E.

in

Molina-Cano J.L. (ed.), Christou P. (ed.), Graner A. (ed.), Hammer K. (ed.), Jouve N. (ed.), Keller B. (ed.), Lasa J.M. (ed.), Powell W. (ed.), Royo C. (ed.), Shewry P. (ed.), Stanca A.M. (ed.).

Cereal science and technology for feeding ten billion people: genomics era and beyond

Zaragoza : CIHEAM / IRTA

Options Méditerranéennes : Série A. Séminaires Méditerranéens; n. 81

2008

pages 469

Article available on line / Article disponible en ligne à l'adresse :

<http://om.ciheam.org/article.php?IDPDF=800906>

To cite this article / Pour citer cet article

Fereres E. **Revisiting the gap between actual and potential crop yields**. In : Molina-Cano J.L. (ed.), Christou P. (ed.), Graner A. (ed.), Hammer K. (ed.), Jouve N. (ed.), Keller B. (ed.), Lasa J.M. (ed.), Powell W. (ed.), Royo C. (ed.), Shewry P. (ed.), Stanca A.M. (ed.). *Cereal science and technology for feeding ten billion people: genomics era and beyond*. Zaragoza : CIHEAM / IRTA, 2008. p. 469 (Options Méditerranéennes : Série A. Séminaires Méditerranéens; n. 81)



<http://www.ciheam.org/>

<http://om.ciheam.org/>

Revisiting the gap between actual and potential crop yields

E. Fereres

IAS-CSIC and University of Córdoba, Apartado 4084, 14080-Córdoba, Spain

Production statistics at regional, national, and higher levels indicate that increasing actual yields is becoming more and more difficult to achieve in a sustainable manner. The reasons for that differ widely among world areas, as yields are not only affected by temporal and spatial variations in weather and soils, but by many other economic and agricultural policy factors as well. In an era of diminishing support for agricultural research in the public sector, it is important to focus and to invest on the topics that would have the highest probability of success. The objective of this paper is to attract attention to the analysis of the causes for the difference between potential and actual yields and to the means –old and new– that can assist in bridging the yield gap. New techniques of spatial analyses and of crop simulation provide diagnostic tools that can be used with much more precision at scales that were not accessible in the past. Conservation agriculture and good agricultural practices are movements that could provide new impetus for closing the yield gap in a sustainable fashion. Most of these activities, and others equally important for achieving this essential objective, such as maintenance breeding directed at pest and disease control, are not receiving sufficient attention at present. The paper ends by wondering what would be the minimum investment required in agronomy (research and teaching), so that if and when the promised new cultivars that could raise productivity to the region of miracles appear, farmers will be able to use them.