Published 1971

MOVING OFF THE YIELD PLATEAU

ASA SPECIAL PUBLICATION NO. 20

Papers presented at a symposium co-sponsored by Divisions S-8 and S-4 of the Soil Science Society of America; Divisions C-1, C-2, and C-3 of the Crop Science Society of America; & Division A-4 of the American Society of Agronomy, held at the tri-society annual meeting, August 25, 1970, in Tucson, Arizona.

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1971

AMERICAN SOCIETY OF AGRONOMY CROP SCIENCE SOCIETY OF AMERICA SOIL SCIENCE SOCIETY OF AMERICA 677 South Segoe Road Madison, Wisconsin 53711

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FOREWORD

In recent years, some agronomists working with crop production, and a number of our leading producers have expressed concern about our having reached a "yield plateau" or barrier to higher yields. Part of this concern springs from the belief that we may have reached an upper limit to yields, especially with corn and soybeans under prevailing moisture and temperature conditions and with the present set of production practices and varieties.

Whereas moisture and temperature are certainly important, they are only two of a great number of interacting inputs and practices comprising a modern production system for crops like corn and soybeans. Therefore, it was thought timely and desirable to arrange a symposium to marshal new lines of evidence from recent scientific and technological advances and evaluate their applicability to crop production systems. The intent was to bring together scientists with a wide range of interests and activities, ranging from highly specialized laboratory research to those working with field experimentation, to pool ideas that could have a bearing on future research and production practices. It was hoped that certain of new findings, when applied to crop production, would contribute to an upward trend in crop yields or stimulate adaptive and applied research, which in turn will push yields from their plateau position to new heights.

Consequently, a number of outstanding crop and soil scientists were invited to participate in a symposium on the theme "Moving Off the Yield Plateau." A prerequisite to their selection was that they be on the "leading edge" of research in specific fields and/or have the background and astuteness to see implications or applications of highly isolated or highly specialized findings to improved crop production practices. The topics included range from growth substances, genetics, and plant physiology to soil fertility, cultural practices, crop protection, and systems integration.

Dr. Robert D. Munson, midwest director with the Potash Institute of North America, St. Paul, Minn., served as organizer and chairman of the symposium. He and Dr. Jerry D. Eastin, plant physiologist, Agronomy Department, University of Nebraska, Lincoln, Nebr., served as co-editors of this publication. Our thanks to them and to the participants in the symposium.

November 1970

Ralph J. McCracken, President Soil Science Society of America

To convert column 1 into column 2,			To convert column 2 into column 1,
multiply by	Column 1	Column 2	multiply by
	LENG	3TH	
0,621	kilometer, km	mile, mi	1,609
1,094	meter, m	yard, yd	0.914
0.394	centimeter, cm	inch, in	2, 54
	AR	EA	
0.386	kilometer ² , km ²	mile ² , mi ²	2, 590
247.1	kilometer ² , km ²	acre, acre	0,00405
2,471	hectare, ha	acre, acre	0,405
	VOLU	JME	
0.00973	meter ³ , m ³	acre-inch	102, 8
3, 532	hectoliter, hl	cubic foot, ft ³	0,2832
2,838	hectoliter, hl	bushel, bu	0,352
0,0284	liter	bushel, bu	35.24
1,057	liter	quart (liquid), qt	0, 946
	MA	SS	
1, 102	ton(metric)	ton (English)	0.9072
2,205	quintal, q	hundredweight,	
		cwt (short)	0.454
2,205	kilogram, kg	pound, lb	0,454
0.035	gram, g	ounce (avup), oz	20, 33
	PRES	SURE	
14.50	bar	lb/inch ² , psi	0,06895
0, 9869	bar	atmosphere,* atm	1.013
0,9678	kg (weight)/cm ²	atmosphere,* atm	1,033
14.22	kg (weight)/ cm ²	lb/inch ² , psi	0.07031
14,70	atmosphere, atm	10/ men-, psi	0,00803
	YIELD C	OR RATE	
0, 446	ton(metric)/hectare	ton (English)/acre	2, 240
0.891	kg/ha	lb/acre	1.12
0.891	guintal/nectare	hundredweight/acre	1,12
1, 15	nectomer/na, m/na	bu/ acre	0. 87
	TEMPEI	RATURE	_
$\left(\frac{9}{7} \circ C\right) + 32$	Celsius	Fahrenheit	$\frac{5}{5}$ (°F -32)
1 2 1	-17.8C	0 F	y .
	0 C	32 F	
	20 C	68 F	
	100 C	212 F	
	PLANT NUTRITION CO	ONVERSIONP AND K	
	P (phosphorus	$) \times 2.29 = P_2O_5$	
	K (potassiur	$n) \times 1.20 = K_2O$	

Conversion Factors for English and Metric Units and Plant Nutrients

* The size of an "atmosphere" may be specified in either metric or English units.