

## OFFICERS

### President

T. H. Blosser  
ARS, USDA

### Vice President

G. A. Muck  
Dean Foods Company

### Treasurer

L. G. Harmon  
Michigan State University

### Executive Secretary

Claude J. Cruse  
Champaign, IL

## DIRECTORS

W. L. Dunkley  
University of California

C. F. Foreman  
Iowa State University

D. B. Emmons  
Agriculture Canada

R. W. Touchberry  
University of Minnesota

B. N. Baumgardt  
Pennsylvania State University

J. H. Martin  
Clemson University

Ed Egermeier  
Menomonie, WI

## EDITOR-IN-CHIEF

L. D. McGilliard  
Michigan State University

## ASSOCIATE EDITOR

C. A. Ernstrom  
Utah State University

## TECHNICAL EDITOR

Cheryl Nimz  
Champaign, IL

## JOURNAL MANAGEMENT COMMITTEE

### Chairman

C. V. Morr  
Clemson University  
Clemson, SC 29631

B. R. Baumgardt  
Pennsylvania State University

E. G. Hammond  
Iowa State University

C. L. Davis  
University of Illinois

## JOURNAL OF DAIRY SCIENCE

Since 1917

American Dairy Science Association

Founded 1906

309 W. Clark Street  
Champaign, IL 61820

## EDITORIAL BOARD

### Research

F. R. Allaire (80) OH  
R. G. Arnold (81) NE  
D. E. Bauman (81) NY  
J. R. Brunner (81) MI  
W. Chalupa (81) PA  
H. R. Conrad (79) OH  
C. L. Davis (80) IL  
J. DeMan (81) Canada  
W. L. Dunkley (81) CA  
R. S. Emery (79) MI  
R. E. Erb (81) IN  
G. F. Fries (80) MD  
S. E. Gilliland (79) OK  
M. L. Groves (80) PA  
E. G. Hammond (81) IA  
H. H. Head (81) FL  
C. W. Heald (81) VA  
V. Holsinger (81) PA  
N. A. Jorgensen (79) WI  
P. G. Keeney (81) PA  
D. W. Kellogg (80) NM  
D. H. Kleyn (81) NJ  
T. Kristoffersen (81) OH  
A. J. McAllister (81) Canada  
L. L. McKay (81) MN  
R. L. Merson (81) CA  
J. K. Miller (81) TN

J. L. Morrill (79) KS  
H. A. Morris (81) MN  
L. D. Muller (81) PA  
M. W. Neathery (80) GA  
H. D. Norman (81) MD  
P. P. Noznick (81) IL  
F. G. Owen (81) NE  
M. J. Paape (81) MD  
C. E. Polan (81) VA  
H. A. Ramsey (79) NC  
R. L. Richter (81) TX  
W. E. Sandine (81) OR  
L. H. Schultz (80) WI  
K. L. Smith (80) OH  
H. Swaisgood (80) NC  
W. W. Thatcher (81) FL  
H. A. Tucker (80) MI  
L. C. Ulberg (81) NC  
C. J. Wilcox (81) FL  
J. W. Young (81) IA

### Our Industry Today

R. D. Appleman (81) MN  
D. L. Bath (80) CA  
D. G. Braund (79) NY  
E. W. Custer (80) MS  
V. H. Nielsen (81) IA  
G. W. Weigold (79) DC

**Manuscripts** offered for consideration should be sent to the ADSA office, 309 W. Clark St., Champaign, IL 61820, in accordance with the Instructions to Authors, J. Dairy Sci. 62:181. Reprints of instruction available from ADSA.

**Membership:** \$16 per year. Student affiliate membership \$8 per year (\$4 without the Journal). Membership in the Association is on a calendar year basis from January through December. Dues should be sent to the ADSA office.

**Institutional Members:** \$30 per volume, one volume per year, January through December. New memberships and renewals begin with the first issue of the current volume and should be sent to the ADSA office.

**Change of Address:** All matters pertaining to the receipt of the Journal and changes in the mailing list should be sent to the ADSA office.

**Claims:** Claims for copies lost in the mail must be received within 30 days (90 days foreign) of the date of issue to insure free replacement.

**Microfilm:** Reprints of articles published in the Journal of Dairy Science, volume 1, 1917 through volume 54, 1971 are available from Xerox University Microfilms, 300 North Zeeb Road, Ann Arbor, Michigan 48106. Rates provided by Xerox University Microfilms upon request.

Journal of Dairy Science (SECD 279380) is published monthly by the American Dairy Science Association, 309 W. Clark St., Champaign, IL 61820. Second class postage paid at Champaign, IL and at additional mailing offices. Form 3579 to be returned to the American Dairy Science Association, 309 W. Clark St., Champaign, IL 61820.

Printed at Kowa Graphics, Inc., Champaign, IL USA. All rights reserved. Reproduction in whole or part prohibited.

© Copyright 1979

American Dairy Science Association