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Agriculture

Agricultural Engineering

Gene C. Shove Papers, 1952-1998

Box 1:

I. BIOGRAPHICAL INFORMATION

II. COURSE MATERIALS

A.E. Farm Solar Radiation Recordings, October-November 1976

Agricultural Engineering (AgE)

199 - Computer Problem Assignment

287 - Exams, 1982

334 - Temperature Grain Drying Problems, 1973

396 - Syllabus and Technology Overview, ca. 1987

Agricultural Mechanization (AgM)

100 - PC Network to load Lotus 123

300 - Section C

Course Development, 1979

Development Correspondence, 1978-79

Lesson Plan Outlines and Drafts, 1979

Solar Collector Sizing Problems, Nov. 8, 1979

Student Final Exams, Dec. 1979

Student Questionnaires, Dec. 1979

Student Suggestions

Agricultural M.S. Degree exam problem for Claudio Moreira, Dec. 30, 1981

Mechanical Engineering 393 - Solar Energy and Thermal Processes, basic definitions and formulas

Course Proposal

Application of Solar Energy to Agricultural Processes, 1978-79

Collection and Utilization of Solar Energy, 1979

Graduate Courses criteria and procedures for proposals and revisions, 1979

IRS Energy Credits and Stores Voucher, 1979-80

Springfield, IL corn moisture content percent graph, 1949-1962

Solar Course Materials

Solar Energy Problem Sets for AgM 300 C and AgE 387, ca. 1981

III. PUBLICATIONS

Publications List, 1967

Master's Thesis - *A Laboratory Investigation of the Adaptability of the Heat Pump to Batch Drying of Shelled Corn*, 1953

Dissertation - *Air Flow Analysis of Grain Ventilation Ducts*, 1959

Agricultural Engineering on the Prairie: Illinois Style, a History of the University of Illinois Department of Agricultural Engineering, 1921-1997 by H. Paul Bateman, William A. Foster, Benjamin A. Jones Jr., and Walter D. Lembke, 1998

Agricultural Engineering Publications, 1968, 1969, 1971, 1974

“Dehydrofrigidation,” “Cooling, Chilling, Dehydrating,” “Low-Temperature Drying,”
“The Biotron,”

Agricultural Engineering Graduate College Flyer

Agricultural Engineering Retreat, 1988

Agricultural Engineering Tips Publications

Agriculture and Energy - “Potential of Drying Grain with Solar Energy,” 1977

Alternatives for Grain Conditioning and Storage Conference, January 18-19, 1978

American Miller & Processor - “Chilled Grain Storage and Dehydrofrigidation,” 1967

American Society of Agricultural Engineers Annual Meeting Presentations, 1959-1971

American Society of Agricultural Engineers, Annual Meeting Presentations, 1972-1988

Ammonia Use for Corn Drying, 1981, 1987

The Business of Farming - “Movable Walls: Economical Storage for Shelled Corn,” 1969

Changes in Quality of Corn between U.S. and Japan by Hill, Paulsen, Shove, and Kuhn, 1985

College of Agriculture Cooperative Extension Service Circulars

Congressional Record Volume 122, October 26, 1976

Drawing of insulated corn drying system, January 7, 1968

Environmental Conditioning Conference, February 6-7, 1968

Equivalent Bushel Calculator, Hill and Shove, 1983

Extension Service in Agriculture and Home Economics Circular number 849 - “Aerating Farm-
Stored Grain,”

Fairbairn FS Services, Inc, *Guide to a Profitable Partnership*

Farm Electrification Council Circulars - Efficient Energy Management with Low Temperature
Grain Drying,” 1976

The Farm Quarterly - “Chill-Drying for Quality Corn” by Bob Parker, 1966

Feed Age - “Feeding Dairy Cows Automatically, Dec. 1964

Forage Corn and Seed Conference, November 19-20, 1979

Grain Age - “Wet Grain Aeration for Holding, Drying Shelled Corn,” July 1969

“Grain Chilling” - Anthony A. Giuffre, 1997

Grain Conditioning Conference part one, 1970, 1975-76

Grain Conditioning Conference part two, 1979-80

Grain Drying

Grain Drying, Handling, and Storage Handbook

Box 2:

Grain Institute - Texas Technological, Lubbock, TX, 1969-70

“Grain Preservatives Extend Allowable Drying Time”

Grain Storage, ca. 1989

Humidity and Moisture, Measurement and Control in Science and Industry, 1965

Illinois Farm Electrification Council Circulars number 101 - “Low Temperature Drying of Shelled
Corn with Electric Heat”

Illinois Research, 1963, 1965-67, 1969-71, 1973, 1976-77, 1985

“Drying Time of Corn can be Extended,” “Cold Storage for Corn,” “Chilled-Air Drying,”

“Wet Grain Aeration,” “Drying with Electric Heat,” “Drying by the Clock,” “Studies are
Continued in a Special Facility,” “Drying with Solar Energy,” “Does Mechanization

Help or Hurt?"

Institutional Energy Program Discretionary Funds Manuscript Proposal, 1979
 VI International Congress of Agricultural Engineering - Mechanization of Dairy Cattle feeding Operations, 1964
 International Symposium on Humidity and Moisture Measurement and Control in Science and Industry Differential Temperature Control, 1963
Iowa Farm Science, 1954
 Iowa State College Cooperative Extension Service Pamphlet, 1957
J. agric. Engng Res. volume 34 - "Dynamic Programming Optimization," 1986
Journée Sur le Séchage du Maïs-Grain à la Ferme, 1978
 Kansas Committee on the Relation of Electricity to Agriculture, 1952, 1969, 1976-77
Low Temperature and Solar Grain Drying Handbook
 "Management of Low Temperature Corn Drying Systems"
 "Mechanization of Dairy Cattle Feeding Operations," 1964
 "New Techniques in Grain Conditioning"
 Ohio Solar Pond
 "On Farm" Corn Grain Drying Conference, April 6, 1977
 Parker, Blaine F. - Papers of Interest to SE-308 members, Feb. 1982
 Paulsen, Marvin R. - Tool Kit Solver and Word Perfect summaries
Planning Grain-Feed Handling for Livestock and Cash-Grain Farms
 "Post Harvest Conditioning of Cereal Grains"
Prairie Farmer - "Aeration is Grain Conditioning Key," 1968
 Purdue University, publication by Bruce A. McKenzie and Otto Doering, and planning recommendations for the 1973 Corn Harvest
 Regional Research Conference Proceedings, July 10-11, 1969 - Alternatives for Conditioning and Storing Corn at Farm and Elevator, February 1970
 Research Proposals, May-June 1978
 Second National Conference on Standards for Solar Energy Use, September 13-15, 1978
 "Solar Energy, Heat Pump Low Temperature Grain Drying" by Morrison and Shove
Solar Energy - "Daily Efficiency of Flat-plate Solar Air," 1983
Solar Energy Systems, Copper, Brass, Bronze Design Handbook
 Solar Energy Utilization for Heating and Cooling
 Solar Grain Drying Conference, January 11-12, 1977
 Solar Heating, 1974, 1976, 1978
 "Solar Radiation Reception, Probabilities, and Areal Distribution in the North-Central Region" by Baker and Klink, 1975

Storage
Transactions of the American Society of Agricultural Engineers, 1963-1983
 "Utilization of Solar Buildings for Drying Grain," 1981
World Soybean Research, 1976

IV. PHOTOGRAPHS

Electric Research Farm, Madison, Wisconsin, 1971-1973
 Personal photos with solar energy collectors, storage bins, and bin construction/repair (black and

white)

V. PHOTOGRAPHIC SLIDES

A.E. Farm

Altman, Landy: Miscellaneous Solar Applications

Application of Solar Energy to Grain Drying (with script), June 1976

Beam Radiation

Bin-n-Solar Building

Blaine Parker

BOYD

Bushel Bin Collapsing, Henning, IL, December 1, 1977

Chris Ron copies

Collecting Solar Energy, W. Peterson

Combination Corn Drying (with script)

Drying System Modifications for Improved Efficiency (complete set), W. Peterson

Energy Requirements of Drying Systems, Morrison

Experimental Demonstrations on the Application of Solar Energy to Grain Drying (with script)

Ferrell, Ross CCF

Field Studies of On-Farm Solar Grain Drying (34 slide set)

Field Studies, On-Farm Solar Grain Drying, Winter 1980-81

General Drying

Geneseo, IL, Solar Ag II

Hay Drying, Vahlkamp by Baker

Hay Drying, Vahlkamp by Baker originals

Hunter Robbins, Indiana

Illinois, EFO, Solar Collectors, Corn Cribs, Gas Fried Dryer

Illinois Farm Electrification Council, Low Temperature Electric Heat Grain Drying originals
(with script), September 1972

Jamie Andrew

John Dewey

Larson, Ray & Dale, Shop Heating, Maple Park, IL

Low Temperature Corn Drying

Low Temperature Grain Drying

Managing Dry Grain in Storage

Marvin Hall

Miscellaneous: grain bins, graphs, gone fishing sign, and solar panels

Ohio Solar Energy (with audio tape)

Passive Solar Heating and Cooling, New Mexico Solar Energy Association (80 slide set -
incomplete)

Plastic Bag Solar Collector

Portable Collector at Sixon SPRS

Selection Materials, Solar Systems and "Black Spot"

Semi-permanent Grain Storage

SIMS, New Hay House

Solar Drying
Solar Energy Grain Drying
Solar Energy Use

Box 3:

Solar Exhibit
Solar Hay Drying (incomplete set of 35)
Solar Hay Drying Extras
Solar House
Solar Grain Drying, General
Solar Grain Drying in Illinois
Solar Grain Drying Originals
Storage Diagrams
Temperatures for Champaign, Urbana, 1978
TING Originals
Untitled Graph
Untitled Group 1 - grain elevators, miscellaneous construction
Untitled Group 2 - drying bins, grain elevators, graphs
Untitled Group 3 - framing construction beams, grain elevators
Untitled Group 4 - grain elevator construction
Untitled Group 5 - bin-in-building/wall-attic solar collector; vegetables
Untitled Group 6 - storage construction, sunshine tracking maps
Untitled Group 7 - storage bin construction process to end
Untitled Group 8 - building measurements, energy consumption, numerical data, storage
construction, ca. 1980
USDA, Altman
Water Heating Collector installed by Illinois Power, Dr. Frank Andrews, fall 1977