

Willard W. Green, 1910–1986: A brief biography

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Willard W. Green was born in Minneapolis, Minnesota on November 17, 1910. His interest in animal agriculture began when he attended the University of Minnesota School of Agriculture, graduating in 1927. He then completed 2 years at Minneapolis West High School, graduating in 1929. He continued his education at the University of Minnesota, receiving a B.S. degree with distinction in 1933 and an M.S. degree in 1934. He majored in animal breeding and minored in agricultural biochemistry. Green then took a position with the University of Alaska for 2 years as an instructor, teaching

20 different courses dealing with agriculture, chemistry, general biology, and zoology. Willard returned to the University of Minnesota in September 1937 to study for a Ph.D., which was awarded in June 1939, again with emphasis on animal breeding and agricultural biochemistry.

Following completion of the Ph.D. degree, Green continued employment at the University of Minnesota as an instructor in animal breeding until 1942, when he was promoted to Assistant Professor. His promotion to Associate Professor came in 1944. All these positions were primarily for research in animal breeding and reproductive physiology, with some teaching. During this period (until 1948), he was author or co-author of 14 journal articles on the breeding and reproduction of sheep and swine and on the nutrition of pigs. He collaborated on several articles with his mentor, L. M. Winters, whom Willard held in high regard. He also co-authored a 36-page monograph on the prenatal development of sheep.

Dr. Green, on leave of absence from Minnesota, was visiting professor and acting head of the Department of Animal Husbandry at the University of Puerto Rico Experiment Station in 1946 and 1947. While there, Dr. John Foster of the Department of Animal Science recruited him to the University of Maryland, where he joined the faculty as Professor of Animal Breeding in 1948.

Green was asked later in his academic career to name his field of animal science. His response was “animal improvement” and the methods for measuring and evaluating improvement. When he began his career in animal breeding, textbooks with animal breeding titles were divided into sections on reproduction and genetics, and in departments of animal husbandry or animal science, multidisciplinary research by an individual was common. Thus, Green conducted research to improve production of beef cattle, sheep, and swine using the tools of physiology, embryology, genetics, nutrition, statistics, and population genetics. He was involved in studies on the anatomy and physiology of sperm cells, modified semen collection techniques, semen diluting media, semen cooling methods, semen storage, and inseminating instruments—all of which contributed to the establishment of one of the first organized artificial insemination units in the United States. This unit matured to become the Minnesota Farmer Cooperative Artificial Insemination Unit, formed in 1939, just one month after the first such unit was organized in New Jersey.

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Reproduction, nutrition, and genetics were three areas that Green researched to explore improvements in swine production. Four papers were published between 1944 and 1949 that identified breeding line differences in the development of libido and sperm cell production by boars. Research on early weaning (7 d of age) of baby pigs was reported in 1947 and 1949. This work, designed to develop procedures to minimize maternal effects for later genetic studies, preceded other serious research on the nutrition of early-weaned pigs. Pig weights of 50 to 60 pounds at 56 d of age reported in these studies were sufficient stimuli to pursue early weaning as a practical matter. Willard was also involved with the development of the Maryland No. 1 breed of swine. Although the breed is probably extinct now, many of the evaluative criteria used in the development of this and other inbred lines or new breeds during that period were adapted by breed associations for their improvement programs.

Much of Dr. Green's work at the University of Maryland was related to the genetic improvement of beef cattle. He published three papers during the mid-1950s that described concepts and experimental data that supported genetic improvement of beef cattle through performance testing. Fifteen popular articles were also written to provide background information for the use of cattle breeders and extension personnel in Maryland and other states as they structured beef cattle improvement programs. One of the early adopters of performance testing of beef cattle was James Lingle, manager of the Wye Angus Herd. Green worked closely with Mr. Lingle in setting up the Wye on-the-farm performance testing that accumulated data used in the mating selections in the breeding program. This collaboration produced a cooperative research venture that established the Wye "B" herd for applied research on application of selection criteria derived from performance testing of growth and reproductive traits. (This research was made possible by private funding from the Wye Herd owner, Arthur A. Houghton, Jr.) Many universities and leading breeders were procuring breeding animals from the herd during this period at prices that were more than adequate testimony to the potential breeding worth of the animals.

Visual appraisal was given substantial emphasis in the selection of breeding animals during Green's career,

and he was particularly interested in the relationship between objective linear measurements taken on live animals as a predictor of lean meat yield. He designed a large-scale study that collected linear measurements on 900- and 1,000-pound steers before slaughter and then detailed carcass measurements after slaughter. The linear measurements estimating skeletal and soft tissue dimensions were then correlated individually and in various combinations with the yield of several wholesale beef cuts. The results were reported in 13 Maryland Experiment Station bulletins and generally concluded that, indeed, skeletal height and length measurements were of value in predicting wholesale cut yield, but several others and most combinations were not.

Willard was an active participant in the affairs of the American Society of Animal Science (ASAS), particularly the Northeastern Section. During the period of 1954 to 1961, he served as secretary-treasurer and president of the Northeastern Section. The annual meeting of the section had dwindled to very low attendance and participation during the immediate years preceding his tenure as an officer. However, Dr. Green's efforts, along with those of Professor George VanderNoot, produced renewed interest and a viable organization that has served ASAS members of the region very well for the subsequent 45 years. Another lasting contribution to the ASAS was his suggestion of the Honorary Fellow Award. He actively promoted this award during his tenure as a regional director and until it was established by the ASAS. He then served on the committee that developed the procedures for the awards and chaired the selection committee for the awards the second year they were presented. Willard was later selected for the Honorary Fellow Award and also received the Northeastern Section Distinguished Service Award.

Willard W. Green was a man of physically large stature who possessed fierce determination, strong convictions, and a wry wit; with this combination of characteristics it was not unusual that he was occasionally misunderstood. What he thought, he also believed, and what he believed, he became. And he was never deterred if his ideas were unconventional or not in style. His wife, Dorothy, was his constant, loyal, and loving companion until her death a few years before his own.