

## Martin A. Massengale

### How did you spend your career?

I was born and reared on a small family farm in Kentucky. I obtained my elementary education in a one-room country school and was permitted to skip a number of grades. My secondary education was in the county high school, and I graduated at age 14. I attended Western Kentucky University (then Western Kentucky State College), where I was awarded a BS degree in agriculture with a minor in biology in 1952. Next came enrollment in the graduate college at the University of Wisconsin, where I obtained an MS and PhD in agronomy at age 22.

The following two years (1956–1958) were spent in military service. In those years, the military draft was mandatory; however, I had been deferred from military duty until I completed my education. After basic training at Fort Carson, Colorado, I spent most of my military career working from Fort Detrick and the Edgewood Arsenal, both in Maryland.

After completing my military obligation, I joined the University of Arizona in Tucson as an assistant professor and assistant agronomist, where I engaged in research and teaching in forage crop physiology and production, especially of alfalfa (*Medicago sativa* L.) grown under desert conditions. In Arizona, these conditions consist of high temperatures, low humidity, and, normally, irrigation. Producers were having problems maintaining their stands of alfalfa.



Photosynthate in excess of that used for growth is stored in the roots of alfalfa plants for future regrowth, flowering, and seed production. By measuring the amount of photosynthate in the roots and the amount used for regrowth at different stages of the plant's maturity, my team and I were able to determine that producers were removing (harvesting) vegetative growth too frequently for the plant's survival. With high temperatures throughout the day and night, resulting in high rates of respiration and the need to supply high levels of energy for rapid regrowth, the plants were not able to manufacture and store enough photosynthate to meet all of their needs when harvested too frequently. There simply was insufficient time for leaf surface area to develop to manufacture and store adequate photosynthate for meeting the plant's requirements. Consequently, the plants would exhaust their energy supply,

become weakened, and possibly die from lack of energy or, in this weakened condition, be invaded by disease organisms and die as a result.

We were able to help producers overcome this problem and maintain their stands by lengthening the period of time between harvests. In doing this work, we were interested in following the manufacture, use, and storage of photosynthate throughout the life cycle of the plants. Therefore, our group was the first, as far as I know, to determine exactly when floral tissue was beginning to be initiated in alfalfa plants and when the plants were starting to shift from the vegetative to the reproductive stage.

The plant physiologists and biochemists I remember best from my Wisconsin days are John Stauffer, Folke Skoog, Elden Newcomb, Robert Burris, and Gerry Gerlof. Dale Smith, a professor of agronomy at Wisconsin, was an applied plant physiologist who did research on alfalfa growth, development, and production. The plant physiologists with whom I had the most interaction at the University of Arizona were Eddie Kurtz, Jim O'Leary, and Robert Mellor. As a matter of fact, Eddie Kurtz recommended I join ASPP and supported my candidacy for membership.

My research and teaching career at Arizona lasted about eight years (1958–1966), and then I was asked to become head of the Department of Agronomy. Later, the Department of Plant Genetics was merged with Agronomy to become the Department of

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## ASPB Legacy Society Founding Member

Agronomy and Plant Genetics. One of the items that I enjoyed most about my work at the departmental level was the ability to interact directly with both undergraduate and graduate students. It was enjoyable to offer advice and counsel and watch students grow and mature as they progressed in their life's work.

After serving in that position for another eight years (1966–1974), I spent two years as assistant dean of the College of Agriculture and assistant director of the Arizona Agricultural Experiment Station before joining the University of Nebraska as vice chancellor for the Institute of Agriculture and Natural Resources. The institute was still young (only two years after its formation), and there was much work to be done in organizing and establishing it within the university. This work kept me actively engaged for the first five years in Nebraska, but I did enjoy the activities.

Following the vice chancellor's position, I served for 10 years as chancellor of the University of Nebraska–Lincoln. During this time, Nebraska experienced the agricultural recession of the 1980s. Nebraska is one of the top agricultural states and is highly dependent on this industry for its income. The state experienced three consecutive years of budget reductions during the 1980s. This was a challenging period, but the University of Nebraska survived reasonably well because everyone worked together to solve the budget problems.

Next in my career path was a five-year period as president of the four-campus University of

Nebraska, comprising the main campus in Lincoln, the Medical Center in Omaha, an urban campus in Omaha, and a smaller campus (formerly a Teachers College) in Kearney. When it was time to step away from a higher level of administration and reduce the constant heavy pressure on my schedule, I became the founding director of the Center for Grassland Studies at the University of Nebraska–Lincoln. This was the area of my professional training and background and my early work as a faculty member. Thus, the final years of my career before retirement were spent developing multidisciplinary programs and majors in areas relating to different aspects of grasses and grasslands.

Never in my early career did I dream of being responsible for colleges, major universities, and programs in the arts, architecture, athletics, business, communications, education, engineering, medicine and other health sciences, law and law enforcement, human resources, museums, residence halls, recreational facilities, prairies and experimental farms, physical plant and facilities, and all other activities associated with major land-grant universities. My professional career has been of long duration, diverse, interesting, enjoyable, rewarding, and productive.

### **What do you consider to be your most important contribution to plant science?**

It is difficult to decide what one's greatest contribution might be, but it probably needs to be decided by others and considered over a long

part of one's career. Considering this question from an economic point of view, it probably was developing a production system whereby alfalfa producers in an irrigated desert environment could maintain highly productive stands of alfalfa lasting over a long period of time. Considering the question from a personnel point of view and not economics, I would say that my abilities to work closely with, to counsel, to advise, and to set examples for faculty, staff, administrative individuals, and students are all highly important and valuable contributions.

### **When did you first join ASPP/ ASPB?**

I am not certain of the exact year I joined ASPP, but I believe it was 1963.

### **How did the Society impact your career, and what motivated you to become a Founding Member of the Legacy Society?**

Although I have not been as active in ASPB as in some other societies, such as the Crop Science Society of America and the American Society of Agronomy, I do believe it is important to join and support scientific societies, and especially those relating to your own area of expertise and interest. Based on my experience and observations, I believe it is important to have a strong and vibrant professional society to provide background information and to promote and be an effective spokesperson for the group it represents. Personally, professional societies have been

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very helpful to me and have had a positive influence on my career development through hosting scientific and informational meetings, workshops, and other exchanges. They have provided opportunities for me to further develop my leadership skills, to become acquainted with different individuals in my areas of interest, to share and discuss ideas and gain insights from others, and to open doors to policy makers.

Professional societies need resources to be effective in growing, developing, and carrying out their responsibilities. For the most part, societies receive their support from membership dues, which are

rarely adequate to support all of their significant needs. Therefore, it is important that their resources be enhanced by private support from members, friends, and interested persons or businesses.

### **What important advice would you give to individuals at the start of their career in plant science?**

There are many different ways for individuals to become successful in their career. I believe that most of the following items can be helpful to a person for enjoying a successful and rewarding career:

- Prepare yourself well.
- Never stint on industry.

- Your integrity should be beyond reproach.
- Become acquainted and interact widely with people in your own area of interest, both within and outside your specific group or society.
- Give credit where credit is due.
- Keep a positive attitude, even when the going gets tough.
- Develop a healthy balance between your work and social life.
- Enjoy your chosen career.

### **Academic Family Tree**

<https://academicfamilytree.org/plantbio/peoplelist.php?searchname=Martin+Massengale&searchalltrees=1&pidconn=-1&allfields=1>