

# Changing Departmental Names from Agronomy to Plant, Crop, and Soil Sciences

W. R. Raun,\* N. T. Basta, J. A. Hattey, H. Zhang, and G. V. Johnson

## ABSTRACT

The word *agronomy* encompasses many important sciences and has become increasingly more difficult to communicate to the general public. We conducted a study to document department name changes from 1980 to 1997 at 51 major land-grant universities where the sciences that comprise agronomy are presently taught. Only 16 of these 51 major universities currently have agronomy in their departmental names. Of these 16, only nine remain as solely agronomy. Of the 28 departments with agronomy in the name in 1980, 13 had made a change by 1997. Currently, the most popular department name derived from agronomy includes a combination of *plant, soil, or crop*. From 1980 to 1997, no university has added *agronomy* to a department name. The majority of all agronomy departments now operate under a different name. Increased specialization within agricultural fields, name recognition, popular perception, image, restructuring, and focus on identity are some of the reasons for name changes from broader, more common sciences such as agronomy. The evolution of plant, crop, and soil sciences; their specialization with time; and the need to clearly communicate their activities to a growing urban population have decreased the common and continued use of words with broader meaning such as agronomy.

AGRONOMY has historically been defined as a branch of Agriculture dealing with field-crop production and soil management (G & C Merriam Co., 1975). More recent definitions include specific references to science with agronomy being the application of soil and plant sciences to farming (Encarta, 1997). Agronomic training includes exposure and education in the disciplines of plant science, soil science, botany, chemistry, entomology, geology, horticulture, microbiology, physics, physiology, pathology, and specific areas of engineering. Because of the broad background and training, it has been difficult to communicate what takes place in the field of agronomy.

Changing the department name from *Agronomy* to *Plant or Crop and Soil Sciences* includes greater visibility, appeal to both rural and urban audiences, and the enhancement of undergraduate and graduate student recruitment (R.L. Westerman, 1997, personal communication). The general public's poor understanding of agronomy has translated into insufficient visibility of programs that should otherwise have broad appeal, especially in subspecialties such as biotechnology and environmental protection. Biotechnology and environmental protection are better understood because the print and television media commonly refer to them.

Department of Plant and Soil Sciences, Oklahoma State Univ., Stillwater, OK 74078. Contribution from the Okla. Agric. Exp. Stn. Received 15 Oct. 1997. \*Corresponding author (wrr@agr.okstate.edu).

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## Agronomy: Focus on Production

Productivity has been the primary goal of agricultural systems since wild plants were first cultivated (Oberle and Keeney, 1991). This orientation toward productivity more recently has been associated with environmental insensitivity, especially for agricultural sciences with continued focus on production and which will become increasingly important tomorrow. Considering the importance of feeding a burgeoning population, it seems essential that our urban and rural public be familiar with the discipline(s) responsible for crop and food production. Miller (1993) noted:

*It is my opinion that agronomy should not dominate our identity any more than the areas of environmental science, waste management, or bioremediation. It is the science and diversity of our discipline that should determine our identity.*

Unpublished notes from the former chair of the now dissolved Agronomy Department at Ohio State University, Fred P. Miller indicated:

*We live in a society that has never been hungry and who is now predominantly two to three generations or more removed from agriculture, thus the interests and social agenda of these citizens are focused more on issues such as crime prevention, economic competitiveness, job security, health care, global change, and environmental quality; food security and diversity are assumed, thus society has little or no incentive to continue to fuel the cornucopia that produces this bounty—kind of like why worry about agriculture as long as we have supermarkets?*

Nonagricultural scientists have argued for increased focus in other areas (business, international trade, and the environment) given the success that the land-grant university system has had with agricultural production in the USA.

## Plant and Soil Science: Nonproduction Focus

In addition to increased specialization of plant and soil scientists, there has been an expansion of topics addressed by members of these disciplines. Over the past 20 to 30 yr, plant and soil scientists have devoted increased attention to environmental and ecological problems. This paradigm shift has severed plant and soil scientists from agronomic roots and placed these scientists in new disciplines focused on molecular genetics and environmental science without application to crop production. Some university scientists believe that this justifies pruning personnel from the traditional agronomic unit and grafting these personnel onto natural resource, environmental science, or similar administrative units. This administrative pruning does not seem to take into account the biologically integrated systems that comprise agronomic sciences.

## Importance of Societies and Society Names

In 1907, the American Society of Agronomy was formally organized at the American Association for the Advancement of Science meetings in Chicago, IL (Gardner, 1983). The Soil Science Society of America was formed as a branch of the American Society of Agronomy in 1936, and the Crop Science Society of America followed in 1955. From 1908 to 1913, the *Proceedings of the American Society of Agronomy* were published and later became the *Journal of the American Society of Agronomy* in 1913 and *Agronomy Journal* in 1949 (Gardner, 1983). The *Soil Science Society of America Proceedings* were published from 1937 to 1975 and since that time has been the *Soil Science Society of America Journal*. *Crop Science* has been published since 1961.

Weed scientists were initially an integral part of the American Society of Agronomy (Pieters, 1935). However, they ultimately founded their own society, the Weed Society of America in 1950. The need for establishing their own society was in part based on perceived increased visibility and increased recognition that would be associated with their profession and the product of their work. It is of further interest to note that the Weed Society of America changed its name in 1967 to the Weed Science Society of America (Klingman, 1967).

Similar problems of identification and communication were evidenced in the field of animal husbandry. Initially, this field of scientists founded the American Society of Animal Nutrition in 1908. The society was renamed to the American Society of Animal Production in 1912, and to the American Society of Animal Science in 1961 (Oltjen, 1983). Some confusion was evidenced in the use of animal husbandry, which was more associated with care and management of livestock than with science (R.L. Willham, Iowa State Univ., 1997, personal communication). Soon after the American Society of Animal Production changed its name to the American Society of Animal Science in 1961, departments whose name included *husbandry* were quickly changed to *science*.

Several specialized areas of research, teaching, and extension used to operate beneath the College of Home Economics umbrella. The College of Home Economics at various land-grant universities has changed to Human and Environmental Sciences and/or similar combinations that have included Health, Ecology, and Consumer within the name.

The Agronomy Department at Oklahoma State University recently changed its name to the Department of Plant and Soil Sciences. This paper documents and discusses recent changes in Agronomy Department names.

## MATERIALS AND METHODS

We initiated a study to document changes in agricultural department names from 1980 to 1997. Departments selected for further study were those where agronomy-related courses were being taught at a major land-grant university in each state. Information relative to the history of land-grant universities, associations, and tradition was obtained from the National Association of State Universities and Land-Grant Colleges (1995). This work did not target 1890, Native

American, District of Columbia, American Samoa, Guam, Northern Marianas, Puerto Rico, or the Virgin Islands universities that are part of the land-grant university system, because they have played a much smaller role in U.S. agricultural development. The states of Alabama, Connecticut, Massachusetts, and California all have more than one major land-grant university. Only the largest agricultural university within each state was utilized in this study, excluding California, where two large universities share in the agricultural production education. Information concerning department names in 1980 was obtained from the 1980–81 Directory of Professional Workers in State Agricultural Experiment Stations and Other Cooperating State Institutions (USDA, 1980). Current names of departments were obtained from the 1995–96 Directory of Professional Workers in State Agricultural Experiment Stations and Other Cooperating State Institutions (USDA, 1996) and confirmed from all current university web pages in 1997.

## RESULTS

At present, only 16 of 51 major universities that teach agronomic sciences have an Agronomy Department or department with *Agronomy* in the name (Tables 1 and 2). Of these 16, only nine remain where *Agronomy* appears alone. Over the past 18 yr, 29 of the departments listed in Table 1 have changed their names, or were restructured into other departments. Of the 28 departments with *Agronomy* in the name in 1980, 13 had made a change by 1997. Before 1980, 22 of these 51 universities having agronomy research, teaching, and extension did not have a department with *agronomy* in the name. At these same 22 universities where *agronomy* is not referenced in a department name, the sciences that comprise agronomy continue to be taught. Of the newer department names derived from agronomy, 19 now include a combination of *plant*, *soil*, or *crop* in the name (Tables 1 and 2). The most common of these is the Department of Plant and Soil Sciences (11) followed by Crop and Soil Sciences (8) with and without the addition of other names and in various orders (Table 1).

From 1980 to 1997, no university has added *agronomy* to a department name. The trend for the term *agronomy* within departmental structures has been in one direction. The majority of all departments that included, *plant*, *crop*, and/or *soil science* and that were either formerly agronomy departments or where agronomy courses were taught, now operate under a different name. Some of the departments that had *agronomy* in their name dropped it when they merged with other groups, a function of reorganization at the university level that contributed to change.

## DISCUSSION

The importance of communicating what we do, and problems associated with poorly understood words were discussed by Keeney (1990).

*The confusion over the terms and concepts of agricultural sustainability is inhibiting cooperative progress toward long-term minimization of the off-site environmental effects and negative social/economic impacts of some of today's agricultural practices.*

**Table 1. Universities, department name(s) where agronomic sciences (research, teaching, and extension) were present in 1980 and 1997, and associated changes that have taken place over this 18-yr period.**

University	Department name(s), 1980	Department name(s), 1997	1†	2‡	3§	4¶
Auburn University	Department of Agronomy and Soils	Department of Agronomy and Soils				Y
University of Alaska-Fairbanks	School of Agriculture and Land Resources Management	School of Agriculture and Land Resources Management				
The University of Arizona	Department of Plant Sciences	Department of Plant Sciences				
	Department of Soils, Water, and Engineering	Department of Soil, Water, and Environmental Sciences	Y#			
University of Arkansas	Department of Agronomy	Department of Agronomy		Y		Y
University of California-Davis††	Department of Agronomy and Range Science	Department of Agronomy and Range Science				Y
University of California-Riverside††	Department of Botany and Plant Sciences	Department of Botany and Plant Sciences				
	Department of Soil and Environmental Sciences	Department of Soil and Environmental Sciences				
Colorado State University	Department of Agronomy	Department of Soil and Crop Sciences	Y		Y	
University of Connecticut	Department of Plant Science	Department of Plant Science				
University of Delaware	Department of Plant Science	Department of Plant and Soil Science	Y		Y	
University of Florida	Department of Agronomy	Department of Agronomy				Y
	Department of Soil Science	Department of Soil and Water Science	Y			
University of Georgia-Athens	Department of Agronomy	Department of Crop and Soil Sciences	Y		Y	
University of Hawaii-Honolulu	Department of Agronomy and Soil Science	Department of Agronomy and Soil Science				Y
University of Idaho	Department of Plant and Soil Sciences	Department of Plant, Soil, and Entomological Sciences	Y		Y	
University of Illinois	Department of Agronomy	Department of Crop Sciences	Y			
		Department of Natural Resources and Environmental Science				
Purdue University	Department of Agronomy	Department of Agronomy		Y		Y
Iowa State University	Department of Agronomy	Department of Agronomy		Y		Y
Kansas State University	Department of Agronomy	Department of Agronomy		Y		Y
University of Kentucky	Department of Agronomy	Department of Agronomy		Y		Y
Louisiana State University	Department of Agronomy	Department of Agronomy		Y		Y
University of Maine	Department of Plant and Soil Sciences	Department of Applied Ecology and Environmental Sciences	Y			
University of Maryland-College Park	Department of Agronomy	Department of Natural Resource Sciences and Landscape Architecture		Y		
University of Massachusetts-Amherst	Department of Plant and Soil Sciences	Department of Plant and Soil Sciences				Y
Michigan State University	Department of Crop and Soil Sciences	Department of Crop and Soil Sciences				Y
University Of Minnesota	Department of Agronomy and Plant Genetics	Department of Agronomy and Plant Genetics				Y
	Department of Soil Science	Department of Soil, Water, and Climate	Y			
Mississippi State University	Department of Agronomy	Department of Plant and Soil Sciences	Y		Y	
University of Missouri-Columbia	Department of Agronomy	Department of Soil and Atmospheric Sciences	Y			
		Plant Science Unit				
Montana State University	Department of Plant and Soil Science	Department of Plant, Soil, and Environmental Sciences	Y		Y	
University of Nebraska	Department of Agronomy	Department of Agronomy		Y		Y
University of Nevada-Reno	Department of Plant, Soil, and Water Sciences	Department of Environmental and Resource Sciences	Y			
	Department of Renewable Natural Resources					
University of New Hampshire-Durham	Institute of Natural and Environmental Resources	Department of Natural Resources	Y			
	Department of Plant Science	Department of Plant Biology	Y			
Rutgers University	Department of Soils and Crops	Department of Plant Science	Y			
		Department of Environmental Sciences				
New Mexico State University	Department of Agronomy	Department of Agronomy and Horticulture	Y	Y		Y
Cornell University	Department of Agronomy	Department of Soil, Crop, and Atmospheric Sciences	Y		Y	
North Carolina State University	Department of Crop Science	Department of Crop Science				
	Department of Soil Science	Department of Soil Science				
North Dakota State University	Department of Agronomy	Department of Plant Sciences	Y			
	Department of Soils	Department of Soil Science	Y			
The Ohio State University	Department of Agronomy	Department of Horticulture and Crop Science	Y			
		Agricultural Technical Institute				
		The School of Natural Resources				
Oklahoma State University	Department of Agronomy	Department of Plant and Soil Sciences	Y		Y	
Oregon State University	Department of Soil Science	Department of Crop and Soil Science	Y		Y	
	Department of Crop Science					
Pennsylvania State University	Department of Agronomy	Department of Agronomy		Y		Y
University of Rhode Island	Department of Plant and Soil Science	Department of Plant Sciences	Y			
Clemson University	Department of Agronomy and Soils	Department of Agronomy	Y			Y
South Dakota State University	Department of Plant Science	Department of Plant Science				
University of Tennessee-Knoxville	Department of Plant and Soil Sciences	Department of Plant and Soil Sciences				Y
Texas A&M	Department of Soil and Crop Sciences	Department of Soil and Crop Sciences				Y
Utah State University	Department of Plant Science	Department of Plants, Soils, and Biometeorology	Y			Y
	Department of Soil Science and Biometeorology					
University of Vermont	Department of Plant and Soil Science	Department of Plant and Soil Science				Y
Virginia Polytechnic Institute and State University	Department of Agronomy	Department of Crop and Soil Environmental Sciences	Y		Y	
Washington State University	Department of Agronomy and Soils	Department of Crop and Soil Sciences	Y		Y	
West Virginia University	Division of Plant and Soil Sciences	Division of Plant and Soil Sciences				Y
University of Wisconsin-Madison	Department of Agronomy	Department of Agronomy				Y
	Department of Soil Science	Department of Soil Science				
University of Wyoming	Division of Plant Science	Department of Plant, Soil, and Insect Sciences	Y		Y	
Totals (51)			29	9	20	16

† Department changed its name from 1980 to 1997.

‡ The word *agronomy* remains in the department name where no soil and/or crop science department was identified independently.

§ Departments where a combination of plant, soil, or crop is included in the name in 1997, and where agronomy is no longer identified.

¶ Agronomy remains in the department name, either alone or with added sciences.

# Y = yes to issues 1, 2, 3, and 4.

†† Two universities listed for California.



**Table 2. Number and percent of departmental names that include agronomy, plant, crop, and soil science, in 1980 and 1997, and changes over this time period.†**

Departmental name(s)	1980		1997		Change	
	No.	Percent	No.	Percent	No.	Percent
Agronomy Department present at one of the major LGU's	22	43	9	18	-13	-25
Agronomy Department or Agronomy + Department present at one of the major LGU's	28	55	16	31	-12	-24
Departments with 'Soil' in the name	25	49	29	57	+4	+8
Departments with 'Plant' in the name	17	33	19	37	+2	+5
Departments with 'Crop' in the name	5	10	10	20	+5	+10
Departments with either Soil, and Plant or Soil and Crop in the name	12	24	19	37	+7	+13

† Some universities had or have more than one department where, either agronomy, plant, crop, and soil sciences are included (see Table 1).

Keeney (1990) further commented:

*Working definitions of sustainability will come with time as research and practice enable more precise evaluation of the concepts and components of agricultural sustainability.*

Unlike the miscommunication associated with *sustainability* (a new word, but not a new practice), husbandry and agronomy are words that have been used less and less over time. This can largely be attributed to the rapid increase in urban populations and a declining agricultural community. From 1970 to 1988, the worldwide agricultural population (all persons depending on agriculture for their livelihood, whether economically active or dependent) had decreased from 53 to 45% (USDA, 1990). In North America, the agricultural population declined from 5.1 to 2.9% from 1970 to 1988 (USDA, 1990). This agricultural population decline shows how effective a relatively small agricultural community has become in North America since 14% of the total world agricultural production (total value of current agricultural output in 1979 to 1981 international dollars, including food and nonfood output—fibers, hides, rubber, and tobacco) comes from this region (USDA, 1990). The success of the agricultural community in the developed world is partly responsible for their being underappreciated today.

Many plant and soil scientists are actively involved in environmental, ecological, and biotechnology sciences, and their involvement in these nonagronomic areas will likely expand in the future. However, plant and soil scientists are likely to become increasingly more specialized and defined as new sciences and technologies are developed.

It is important to note that crop production practices are implicit when using agronomy, and that they are sacrificed as increased specialization is communicated in department names (i.e., plant, soil, weed, and range sciences). Following a reorganization process at the University of Illinois, it was noted that some changes in department names can improve overall external visibility, and ultimately address society's priorities (G.H. Heichel, 1998, personal communication).

Practicing agronomists are still present today, but they are rapidly being replaced by specialists in different fields.

This is especially apparent in the field of precision agriculture. It will be increasingly difficult for agronomists to perform field scouting; make fertilizer, herbicide, and insecticide recommendations; while also being proficient in global positioning systems (GPS), geographic information systems (GIS), and aerial imaging applications.

As per Abelson (1993), emeritus president of Stanford, Donald Kennedy stated that

*the institutions that make the hard choices, that are willing to redefine what is fundamentally important, will eventually distance themselves from the rest.*

Similar comments concerning resistance to change in the American Society of Animal Science were made by Oltjen (1983), citing an anonymous source, "One can stand still in a flowing stream, but not in a world of men." In this regard, restructuring and name changes within departments should be viewed as evolutionary and not as an abrupt step or change (G.H. Heichel, 1998, personal communication).

*Agronomy* as a department name has become less common over the past 20 yr. Restructuring, image, visibility, communication, popularity, and increased specialization are some of the factors that have been considered to be important for department and society name changes.

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## REFERENCES

- Abelson, P.H. 1993. The american research university. Science (Washington, DC) 262:487.
- Encarta 97. 1997. Microsoft Encarta 97 Encyclopedia. Microsoft Corp., Seattle, WA. <http://www.encarta.com> (date visited: Sept. 1997).
- G & C Merriam Company. 1975. Webster's new collegiate dictionary. G & C Merriam Co., Springfield, MA.
- Gardner, C.O. 1983. Presidential address, Reflections. Agron. J. 75:157-160.
- Keeney, D. 1990. Sustainable agriculture: Definition and concepts. J. Prod. Agric. 3:281-285.
- Klingman, D.L. 1967. Minutes of the business meeting, Weed Science Society of America. Weeds 15:383.
- Miller, F.P. 1993. Soil science: A scope broader than its identity (a guest editorial). Soil Sci. Soc. Am. J. 57:299.
- National Association of State Universities and Land-Grant Colleges. 1995. The land-grant tradition. NASULGC, Washington, DC.
- Oberle, S.L., and D.R. Keeney. 1991. A case for agricultural systems research. J. Environ. Qual. 20:4-7.
- Oltjen, R.R. 1983. Significant milestones in the 75 year history of the American society of animal science. J. Anim. Sci. 57:2-15.
- Pieters, A.J. 1935. What is a weed? Agron. J. 27:701-703.
- U.S. Department of Agriculture. 1980. 1980-81 Directory of professional workers in state agricultural experiment stations and other cooperating state institutions. Agric. Handb. 305. USDA, Washington, DC.
- U.S. Department of Agriculture. 1990. World agriculture, trends and indicators, 1970-89. SB-815. USDA, Washington, DC.
- U.S. Department of Agriculture. 1996. 1995-96 Directory of professional workers in state agricultural experiment stations and other cooperating state institutions. Agric. Handb. 305. USDA, Washington, DC. ♦