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Observations of Animal Science Curricula

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Introduction

The information in this report was taken from the current college catalogs and bulletins available in the library at Northwestern State College. Data were collected from the bulletins of 37 land grant colleges representing 36 states and of 26 non-land grant colleges representing 11 states. In several bulletins from other colleges the curricula were not listed specifically by course, but were to be worked out in consultation with the students advisor. It is assumed that the curricula of these few colleges would not be too different from those that did list the specific courses in their programs. It is therefore assumed that the colleges chosen to be included in this report are representative of all land grant and non-land grant colleges.

The purpose of this investigation was to determine how colleges teaching agriculture and animal science compare with each other in their curricula and course offerings. Of particular interest was how animal science curricula at non-land grant colleges compare to those of land grant colleges. No effort has been made here to recommend a particular curriculum. In effect, this article reflects the composite opinion of the hundreds of college people who prepared the curricula at the several colleges used in this report.

The semester credit hour is used in this report. Only about 15 percent of the non-land grant colleges and about one-third of the land grant colleges are on the quarter-hour basis. The conversion from quarter to semester hours was made using the ratio of three quarter hours to two semester hours.

The number of options available in animal science is greater at land grant colleges than at non-land grant colleges. One or more options are usually available in science, business, and technology (production) in traditional departments of animal, poultry and dairy husbandry (or science) at land grant colleges of agriculture. In a majority of non-land grant colleges courses in agriculture are taught by one department rather than by several departments, however, about one-third of the non-land grant colleges have schools or divisions of agriculture with two or more departments.

Physical Sciences and Mathematics

The data in Table 1 reveal several similarities and differences in programs between land grant and non-land grant colleges. On an average, land grant colleges require about five semester hours more in the physical sciences and mathematics. The requirements for general and organic chemistry are essentially the same at both land grant and non-land grant colleges. In a similar report by Hamilton (1), a preponderance of 32 colleges that were members of NACTA required between seven and eight hours of general chemistry and between four and five hours of organic chemistry. The two reports are essentially identical in this respect.

Physics is required at 57 percent of land grant colleges, but at only 19 percent of non-land grant colleges. Analytical chemistry and statistics are requirements at 25 percent of the land grant colleges. Only one-half that many non-land grant colleges require these two courses.

Algebra or algebra and trigonometry is required by at least

59 percent of land grant colleges and 50 percent of non-land grant colleges. General mathematics is listed as the beginning mathematics courses at 11 percent of land grant colleges. However, 42 percent of non-land grant colleges listed general mathematics. Calculus was listed as a requirement in 22 percent of land grant colleges compared to only eight percent of non-land grant colleges.

Animal and Biological Sciences

For the purposes of this article, biology courses, biological chemistry, and certain animal sciences are combined as a group. Some traditional biology courses are taught in many colleges by departments other than biology departments. For example, in many colleges, entomology, genetics, physiology, and disease courses are taught by departments or schools of agriculture or veterinary science and medicine or departments of animal science. Biological chemistry and agricultural chemistry are combined and included in this category. No attempt has been made to group courses according to traditional departmental lines.

All colleges listed at least one course in general biology or zoology. Approximately 30 percent of all colleges require only general biology. With the trend toward integrating general botany and zoology by many colleges, it is of interest to note that 70 percent of the animal science curricula still contain a separate course in general zoology.

Over two-thirds of all colleges listed microbiology as a required course. About one-third of all the colleges require at least one course in animal sanitation, diseases or parasites. One-third of all colleges also require a course in biological or agricultural chemistry. Practically every college listed at least one course in animal breeding or genetics. More land grant colleges require anatomy and physiology (including physiology of reproduction) than do non-land grant colleges — 73 percent versus 62 percent — with more hours being required at land grant colleges (seven hours versus four hours).

All non-land grant colleges listed courses in principles of nutrition or applied nutrition or both. These courses were listed by only 76 percent of the land grant colleges. An assumption might be made at this point that more land grant colleges probably require courses in nutrition although it was not listed by 24 percent of these colleges. This assumption is based partially on the fact that many of the bulletins from land grant colleges listed electives in the major field to be selected by the student in consultation with his advisor.

A greater percent of land grant colleges require entomology than do non-land grant colleges (41 percent versus 27 percent). Both groups of colleges generally listed only one course in entomology. Courses in animal products were listed as requirements by fewer land grant than non-land grant colleges, however, land grant colleges require a greater number of hours. The total requirements in the area of animal and biological sciences is about three hours greater for land grant than for non-land grant colleges.

The curriculum content committee of the Conference on Undergraduate Teaching in the Animal Sciences (2) recommend the following core courses in animal science: