

Animal Science

Its Objectives And Opportunities

Bruce Taylor

Department of Animal Science

Animal Science refers to the total knowledge and practices relative to the breeding, feeding and management of animals and the marketing and processing of their products. It is a growing, dynamic, ever-changing field that is based on science and prepares graduates in Animal Science for a choice of many fields of work—all related to animal agriculture.

Americans enjoy a standard of living second to none because of scientific know-how. Livestock production is fundamental to proper land use, as the produce of nearly two-thirds of our land must find its market through livestock. Predicted population gains by 1975 will demand an increase of one-third in livestock production if we are to enjoy our present per capita consumption of meat—our current American way of life.

Opens Many Doors

At the University of Arizona a student majoring in Animal Science may further specialize by choice of electives in Animal Nutrition, Livestock Production and Management, Animal Industry Sales and Services, Meats or Animal Breeding. Livestock judging teams represent the university at two major national contests and the university's first meats team will compete in 1958. A new meats laboratory was completed in 1957, widening instructional work in meats, as there is close association between Animal Science and the meat packing industry—third largest industry in the nation.

Modern Animal Science requires a background in science courses and challenges the best brains of each year's incoming freshmen, yet has enough applied courses so that graduates can proceed on their first job with both knowledge and know-how.



Has Contact With Research

Students in Animal Science have, in addition to classroom work, contact and often employment with the research experiments in nutrition, animal breeding and meats being conducted by the Arizona Agricultural Experiment Station. These experiments involve some 500 cattle and a like number of sheep annually.

Back to the more practical, students have association with the Extension Animal Husbandman for Arizona, whose office is in the Animal Science Department. Students work with the registered herds of Angus and Hereford beef cattle and Hampshire and Rambouillet sheep.

Graduates with a B.S. degree in Animal Science have numerous job opportunities in livestock production and management, in sales and services with related industries, in extension work and in meats. For example, students with a B.S. degree in Animal Science and with meats team experience start in the USDA Federal Meat Grading Service with a higher civil service rating than do graduates without this specific training.

Starting this year, the university can provide experience in mixing modern rations with modern equipment. This training will prepare the graduate for employment with commercial, large scale livestock feeding operations.

Plateaus of learning advance with our fund of knowledge, hence more graduates are working for advanced degrees than ever before. In the nutritional field,

ABOVE, the University of Arizona's 1957 livestock judging team, coached by Dr. George Nelms, at extreme right in the front row. This was high team in judging beef cattle at the intercollegiate contest in Ogden, Utah. Judging, selection and grading of livestock are part of the skills learned in Animal Science.

employment and advancement with the research departments of meat, feed, or pharmaceutical companies is best assured by having no less than an M.S. degree.

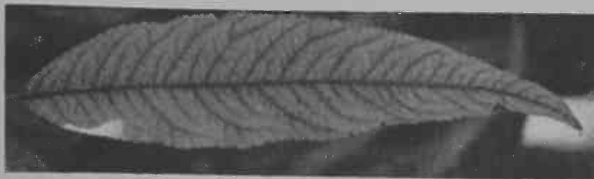
Research and Teaching

College teaching and research is another field of employment open to those with advanced degrees. The need for good teachers with modern training at the college level is particularly great. With anticipated population gains this need will grow. It is an opportunity not to be overlooked.

The field of feed additives (drugs that stimulate gains) is new and growing. This opens up an entire new field for Animal Science trained personnel in the pharmaceutical companies. Many of these companies are building research centers and see great possibilities for the future.

As always, a number of Animal Science graduates will return to the farm or ranch. Some 35 per cent of the Animal Science graduates from the University of

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AT LEFT, a peach leaf showing symptoms of iron chlorosis, which usually can be distinguished from other types of chlorosis. Note that the veins remain green while interveinal areas become yellow.



CHELATES

Control Iron Chlorosis In Trees and Shrubs

J. R. Kuykendall and H. F. Tate

Department of Horticulture

Both favorable results and some failures have rewarded a testing program of two commercially available iron chelates on 150 trees and 70 shrubs in 11 Arizona counties.

Iron chlorosis—a nutritional stress showing need of iron—occurs on these plants tested and also on citrus in the Salt River Valley and on the Yuma Mesa. The use of iron chelates for correction of iron chlorosis in citrus has been reported previously in *PROGRESSIVE AGRICULTURE* and elsewhere.

Study of Chelate Response

The main objective of the current tests was to learn how different species of fruit trees, shade trees and shrubs affected with iron chlorosis would respond to soil applications of iron chelates. The soils involved ranged from the very sandy soils of the Yuma Mesa to the heavy adobe in the Salt River Valley.

The two iron chelates tested are sold under the trade name of Sequestrene 330 Fe and Versenol. Both chelates are water soluble powders containing 10.5% and 9.0% metallic iron respectively.

Three basic methods of application were used. In the first, the dry iron chelate powder was broadcast on the soil in a shallow basin around the base of the tree or shrub. The area over which the material was spread ranged from 100 to 400 square feet, depending on size of the tree. This method was used on larger trees where rates of from half a pound to two pounds were applied.

For Smaller Plants

On smaller plants, where applications of one teaspoon to two tablespoons were used, a better distribution was obtained by dissolving the chelate in about a gallon of water and applying the solution on the soil around the plants.

A third method, used in some cases but with generally poor results, was to place the iron chelate in 10 to 30 holes punched into the soil with a crowbar, after which the holes were filled with water.

Manufacturers' suggestions were followed with respect to rates of application where conditions permitted. In some localities, for the same species of plants, good correction of chlorosis was obtained with comparable rates of both the Versenol and Sequestrene 330 Fe. In general, the Sequestrene 330 Fe was somewhat easier and safer to use. It was possible to use a wider range of application rates without causing injury to foliage with this chelate. However, in many cases it was possible to get good correction of chlorosis with somewhat lower rates of Versenol, although it usually took longer to "green up" chlorotic foliage.

Success With Many Species

Good to excellent correction of iron chlorosis on adapted plants with applications of iron chelates was obtained in all localities on all soil types with silk oak, bottle bush, apple, grape, bougainvillea and nandina. Responses on peaches, plums, gardenia, myrtle, pyracantha and privet were variable. Generally on light soils the response of these plants was good to excellent, while response on heavier soils was fair to poor. Pear trees, roses and spirea gave the poorest response in most areas. At St. Johns excellent greening of a chlorotic lawn of Kentucky blue grass was obtained.

In 1958 these tests will be expanded to include comparisons of the iron chelates with other iron compounds. Comparisons of responses from soil applications and foliage sprays of the iron chelates and other sources of iron are being continued.

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Arizona now own and operate farms and ranches. However, considering the nation for a moment, about two out of every five male children must leave the farm or ranch—only three of the five being needed to replace the established farmers who leave the land.

Thus, it is imperative that more and more rural youths prepare for their future with a university education. For those with a love for or interest in animals,

Animal Science offers abundant opportunity.

Animal Science Jobs

1. Farm or ranch operation—as owner, partner, lessee or manager.
2. Registered livestock production—as owner, manager or herdsman.
3. Meat packing companies—as salesmen, buyers, research workers, by-products, feeds or other segments of this industry.
4. Banks, livestock loan companies—as fieldmen.
5. Feed and pharmaceutical companies—as salesmen, fieldmen, or research workers.
6. College teaching and research.
7. Extension work.
8. Farm management companies.
9. Government Service—in extension, meat grading and marketing, research work, management, etc.
10. Graduate work—with a graduate assistantship or fellowship to help finance the advanced degree.
11. Communications—radio, television, farm or livestock publications by emphasizing journalism in choice of electives.
12. Public relations work with many companies—in agriculture or related fields.