Robert M. Kerr Food & Agricultural Products Center

FOOD TECHNOLOGY FACT SHEET

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OSU Center for Pet and Animal Food Palatability Studies

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Introduction

The purpose of this fact sheet is to provide information about the Oklahoma State University Center for Pet and Animal Food Palatability Studies. This fact sheet will briefly describe some of its methods, list services provided by the center and close with a case study illustrating the use of pet owners in taste tests.

Pet and animal food products are emerging as important areas of economic development for Oklahoma. Low-value and underutilized raw materials can be converted into high-value animal foods. Taste trials or palatability studies are a critical aspect in the development process of any new pet or animal food. The Center for Pet and Animal Food Palatability Studies provides clients with a complete range of services including experimental design, data analysis and interpretation of results.

A unique aspect of this center is that it can accommodate a wide range of animals including invertebrates and such popular vertebrate pets as cats, dogs and fish. It also can accommodate farm animals such as llamas, horses and cattle and can test products developed for reptiles.

In addition to the ability of using a wide range of animals, the center can design traditional laboratory-based tests in which animals are trained under highly controlled conditions to perform various responses to determine the palatability of a feed or pet food.

The center contains such standard laboratory-based apparatus as operant conditioning chambers (the so-called "Skinner box") suitable for a wide variety of animals including rodents, fish, birds, crustaceans, llamas and horses. It also has a variety of shuttle boxes (i.e., choice chambers) and Pavlovian conditioning situations suitable for many invertebrate and vertebrate species.

Facilities also are available for constructing apparatus for more exotic or non-standard animals. Figure 1 shows an operant chamber for a llama. Llamas are trained to poke their head through a hoop, and the response is detected by photocells. This apparatus has been used to show the animal's preference to various types of grains or to turn on fans or water misters.

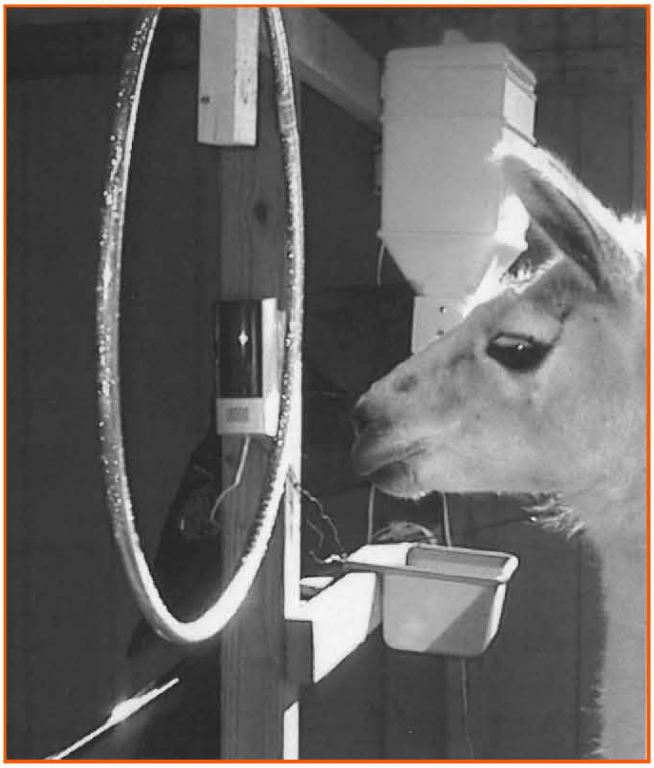

Figure 1. An operant chamber for a llama.

To increase the ecological validity of its findings, the center also can provide the client with a field test. Its method of field testing is rather unique and is illustrated in the case study portion of this fact sheet.

Services available

The OSU Center for Pet and Animal Food Palatability Studies provides a number of services, listed below. A wide range of invertebrate and vertebrate animals can be accommodated and special projects also will be considered.

In return for these services, the entrepreneur provides an adequate quantity of the product to be tested and funds

the project. Fees are calculated in advance and are assessed for student time, materials, travel (if appropriate) and maintenance of equipment.

1. In-home and on-farm animal taste panel evaluation of pet treats, pet food and animal feed.
2. Traditional laboratory-based palatability studies.
3. Field-based palatability studies.
4. Professionally prepared reports including video records of findings.
5. Evaluation of human reactions to the pet products (i.e., ease of use, packaging).
6. Shelf stability analysis, packaging, recommendations, business planning and marketing assistance, process design, pilot-plant facility, equipment selection and facility layout and design (these services are available from the FAPC).

Case Study: The Citizen Scientist Program

Over the past several years the Center for Pet and Animal Food Palatability Studies has studied a wide variety of pet food products ranging from fish bait to cat treats. When field tests are needed, the center implements a program called the citizen scientist program.

The citizen scientist program trains pet owners to conduct palatability studies on their pets and livestock. The owners are trained in the skills required to conduct the taste trials and record results. In return for participation, the pet owner receives pet food and the knowledge obtained from participating in a scientific study.

The latter should not be underestimated. Many of the characteristics of performing scientific research such as problem solving behavior, discipline and library research are as useful to the citizens in the general population as they are to scientists. Moreover, the negative perceptions that children have of scientists can be reduced by participating in the activities that scientists engage in.

The center had the opportunity to test a new health treat for dogs by using house pets instead of kenneled animals. The center wanted to directly test the product under field conditions. By working directly with pets in a natural environment, the issue of generalizing from kennel to home is eliminated.

An added benefit of using pets is that the center is able to test animals with special characteristics such as blindness, obesity and those on medication. The citizen scientist program also allows the center to test a wide range of breeds.

The typical citizen scientist palatability study involves several steps. First, it recruits citizen scientists by creating a Web listing. All participants are required to have an animal in good health. Each animal is seen by a veterinarian prior to the study. Participants also are required to have a video camera.

Second, center staff meet with potential participants to explain the purpose of the study.

Third, those who want to participate are trained to: 1) conduct the tests and 2) record data on data sheets and video. Figure 2 shows three young citizen scientists (under adult supervision) conducting a palatability study with their pet beagle.

The volunteers meet often with center staff to review the data and view the video tapes. During these meetings changes in experimental design are discussed. Following the experiment the volunteers are debriefed.

Figure 2. Three citizen scientists conduct a food palatability study (under adult supervision) with their pet beagle.

Conclusion

A new and valuable resource has been added to the tools that are available to the public from OSU. The Center for Pet and Animal Food Palatability Studies provides expertise and economical alternatives for pet food and animal feed taste trials for both companies and the general public. The Center can accommodate a wide range of animals under both laboratory and field conditions. For additional information and to initiate your pet food or animal feed taste trial, please call the Food and Agricultural Products Research and Technology Center at (405) 744-6071 or e-mail authors Tim Bowser at bowser@okstate.edu or Charles Abramson at charles@okstate.edu.

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