RESEARCH OVERVIEW

A general overview of recent research activities can be derived by viewing of the following sections on USDA/CSREES RESEARCH PROJECTS, INTERNATIONAL PROJECTS, ABSTRACTS, and ARTICLE SUMMARIES.

Research activities of the E (Kika) de la Garza Institute for Goat Research in the last year have been considerable, as is the case for previous years. This is the product of many factors, probably the most important of which is the people involved. The number of permanent faculty in the Institute involved in research is not large in comparison with animal science departments in many other Land Grant universities. Hence, to achieve a strong research program, research faculty of the Institute aggressively seek extramural support. Grants obtained provide funds for equipment and supplies to conduct research, and very importantly support for Graduate Students, Postdoctoral Research Associates, and established scientists on sabbaticals, who all are often termed “Visiting Scholars.” These Visiting Scholars have made a large contribution to the high-quality research that has been realized and hopefully will also be achieved in the future.

There has been a wide array of areas of research addressed in recent years, which can be evidenced by the list of projects and publications subsequent to this overview. All major types of goats raised in the US are considered, i.e., ones raised for meat, milk, and/or fiber, both cashmere and mohair. The increasing demand for goat meat and decline in the mohair industry in recent years has caused corresponding shifts in emphasis, but because the future is unknown, all goat industries will continue to receive attention. The Institute has and will in the future conduct research to increase levels and efficiencies of goat production, enhance utilization of goat products, and improve use of goats for specific purposes such as vegetation management. There is intent to increase economic returns to those raising goats or processing their products, as well as providing other benefits like enhanced sustainability of livestock production systems.

One of the factors influencing specific research topics is obviously the expertise and knowledge of permanent research faculty of the Institute. A major focal point is nutrition and feeding practices, although certainly the research program has not been limited to this area. Numerous physiology, reproduction, management, breeding, parasitology, milk and milk product quality, udder health or mastitis, and fiber quality studies have been performed, facilitated by broad fields of knowledge of the permanent faculty. In this regard, frequently grant proposals are submitted which, if approved, include funds to support a Visiting Scholar with unique expertise required for completion of the project. For research in the foreseeable future, it will continue to pertain to areas of importance to the various goat industries in the US. The close link and coordinated, complementary research and extension programs of the Institute allow identification of researchable areas of potential practical importance to present and future goat producers and product users.

The Institute currently has herds of Alpine, Angora, Spanish, and Boer goats, along with crossbreeds and a small number of Tennessee Stiff Leg. Sometimes we are asked why other breeds are not used. In part this is because of the considerable resources required for maintaining adequate numbers of the difference types of goats necessary for planned experiments. There is great care taken to maintain balance, to have on-hand enough animals for the large number and wide array of experiments conducted, but yet not to expend limited resources on animals not being used in research. RELATEDLY, another consideration is the types of animals within the different breeds or breed types. The intent is to have animals typical of those of clientele so that research findings are relevant and of value to the majority of farms, rather than to have the most elite herds. And, in fact, in the...
future there might very well be different sub-herds, since production potential can interact with specific management practices.

As noted before, a unique aspect of the Institute’s research program is that a large proportion is made possible by grants, many of which are through USDA programs. Hence, although the broad or general direction of the research program is known, specific topics of investigation in 2- to 4-year periods partially depend on the faculty’s ability to prepare grant proposals dealing with novel, unique, and sellable ideas, and naturally on the opinions of specific proposal reviewers and review panels. Faculty are strongly encouraged to seek extramural support funds, but there is care taken to ensure that proposed activities fit with the general direction of the program.

Research previously and in the future conducted at the Institute is applied in nature, which is felt most appropriate considering the needs and states of the various goat industries in the US. However, there is cognizance that in order to realize most rapid long-term progress, underlying physiological mechanisms or processes must be thoroughly understood, rather than merely noting whether or not a production response to a particular treatment occurs. Therefore, our research by design in most cases entails many somewhat basic or fundamental measures. Another research consideration to be mentioned is that some activities yield findings of immediate potential use by clientele. On the other hand, other topics are quite complex and not presently well understood, requiring much study before field application. If important enough, then a stepwise approach is taken to address such issues.

Permanent faculty and Visiting Scholars have been mentioned. Though their efforts are integral, it is important to recognize the equally essential contributions of other research personnel of the Institute, notably those of the Research Farm and Laboratory. Only with the hard work of these dedicated people can a highly productive research program be realized. Farm and laboratory personnel work closely with the researchers. In fact, for the purpose of proper training of Visiting Scholars and most appropriate research conduct, as well as because of periodic high labor demands, researchers participate in many laboratory and farm activities. Relatedly, with so many people involved in specific experiments, often from different parts of the world with various previous experiences and training in research, vehicles to maintain organization such as detailed research protocols are employed.

In a subsequent section, research projects are listed. Although dissemination of information generated from all of these projects occurs, some entail strong extension components, examples being “Use of goats for sustainable vegetation management in US grazing lands” and “Enhanced goat production systems for the southern United States.” Likewise, there are projects listed in the section about our international activities that entail significant research components. For instance, most of the collaborative projects with Ethiopian universities have included training of their faculty members at the Institute, a large part derived via conduct of an experiment.

Information obtained through research is of value only if transferred to people who can derive benefit from it. In the publication section, it should be apparent that a key mode of disseminating research findings of the Institute is in peer-reviewed articles in scientific journals. Journals felt most appropriate for the studies are chosen. It follows then that since goats are important in many countries throughout the world, the official journal of the International Goat Association, “Small Ruminant Research,” has been heavily relied upon. We strive to publish as quickly as possible after experimentation is complete. However, with the large amount of research always underway, and moreover because of the involvement of many Visiting Scholars from other countries here from a few months to 3 years, occasionally the publication process might not be realized in as timely of a fashion as desired. Presentations are made at scientific meetings, such as of the American Society of Animal Science, with accompanying abstracts. Also, our research findings are transferred in
numerous other ways, such as fact sheets, the Goat Newsletter, Proceedings of the Annual Goat Field Day, meetings of producer groups, farm visits, phone calls, emails, etc.

In summary, the research program of the E (Kika) de la Garza Institute for Goat Research continues to thrive. This is a result of many factors, among which are fine efforts of earlier personnel, and in particular of those of the Institute now. And, based on the current conditions at the Institute, we have even higher expectations for future excellence.
Standard Abbreviations Used

ADG = average daily gain
BW = body weight
cm = centimeters
CP = crude protein
d = day
dL = decaliter
DM = dry matter
DMI = dry matter intake
g = gram
kg = kilogram
L = liter
M = mole
mL = milliliter
mm = millimeters
mo = month
ng = nanogram
N = nitrogen
NDF = neutral detergent fiber
OM = organic matter
P = probability
SE = standard error
TDN = total digestible nutrients
wt = weight
vol = volume
vs = versus
µ = micro
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