

The National Animal Germplasm Program (NAGP) Program Update - March 30, 2000

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Flexibility for economic growth and production of high quality protein through biodiversity

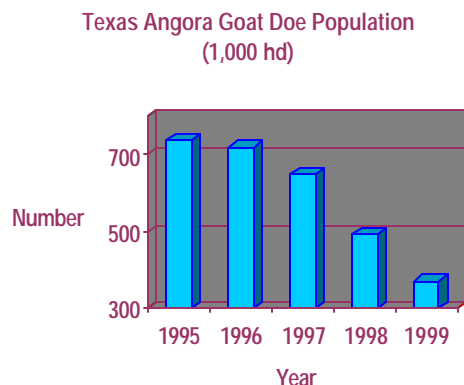
Species Committees: All species committees have been formed. The Small Ruminant committee met in conjunction with the Southern Section Meetings of the American Society of Animal Science. Other committees have tentative meeting dates as follows:

- Beef – At the June meeting of the Beef Improvement Federation in Wichita, KS.
- Swine – In June at the World Pork Expo, Indianapolis, IN.
- Dairy – In July at the ASAS/ADSA meetings in Baltimore, Maryland.
- Poultry – In August at the World Poultry Congress in Montreal, Canada.
- Coordinating Committee – In July at ASAS/ADSA meeting in Baltimore.

Small Ruminant Committee Briefs: At the committee's first meeting there were two key topics. First, identification of breeds of sheep and goats that may be losing genetic diversity due to small or decreasing numbers. Second, identification of genetic resources that could be imported and assist the American sheep industry become more competitive.

On the conservation front two breeds of sheep and two goat breeds were identified as in need of monitoring and potentially cryopreserved. The sheep breeds of concern are the Gulf Coast Native and Navajo Churro. The goat breeds include the Myotonic (or Tennessee Stiff Legged) and the Angora. For each of these breeds committee members will develop conservation plans and potential courses of action proposed given each breed's status.

The following graph demonstrates how the Angora goat population has decreased over the last five years and therefore the cause for concern. The association reports a similar decrease in the number of registrations from 3,148 in 1998 to 2,442 in 1999; a 22% decrease.



A second issue the committee addressed was accessing genetic resources that do not exist in the U.S. Particularly hair and dairy breeds. As a result

committee members will develop papers outlining the rationale for importing such breeds and how an importation program could be structured.

National Resource Survey: The NAGP in conjunction with the American Livestock Breeds Conservancy is in the process of developing a national survey to determine the population status of U.S. breeds. As planned the first survey work will begin in June with Turkeys, research chicken lines and goats. The process of conducting the survey for all species and analyzing the information is targeted for completion in late 2001.



Assistance with Live Animal Populations: Live animals are the best way to maintain genetically diverse populations. NAGP is working with the University of California Animal Science Department (Mary Delany) and Genetic Resources Conservation Program (Cal Qualset) to do this with unique chicken populations maintained at that university. We will also be collaborating on freezing semen from these populations and storing the semen in California and at NAGP in Fort Collins.

Accession Development: NAGP will start receiving germplasm later this spring with lines of swine semen from the Germplasm & Gamete Physiology Laboratory and 52 chicken lines from the ARS laboratory in East Lansing, Michigan. Thanks to Larry Johnson of the Germplasm & Gamete Physiology Laboratory for transferring the unit's MVE-1830 liquid nitrogen tank to NAGP/Fort Collins. The tank is capable of storing approximately 60,000 1/4 cc straws.

Database/Information System Development: A major task for NAGP is the development of a comprehensive information system. The completed database/information system will allow users to view the size and diversity of collected germplasm at NAGP,

monitor the status of breed populations and to visualize population changes over time in the context of a geographic information system format.

A critical aspect of database development is having the ability to inventory material coming into the NAGP quality control laboratory and keeping track of it as it proceeds through viability and pathogen testing and into long-term storage. The ARS-GRIN database unit in Beltsville has assigned Ed Bird, Erick Abadie, and Sharon Stern to work with NAGP in developing the database and the web pages. By the summer meetings of the American Society of Animal Science and American Dairy Science Association we will have a first iteration of the database for display and comment.

Aquaculture: Joe Cloud (Aquaculture Committee Chairman) has been establishing the Aquaculture Committee with a combination of members from all aspects of aquaculture (finfish and shellfish). Curry Woods (University of Maryland) will start collecting a wide variety of Stripped Bass strains for cryopreservation with NAGP. The complete collection will take 18 months.

Future Committee Tasks: As we meet over the summer there will be a number of tasks committee members will need to address. Below is a Forrester Diagram that represents the flow of genetic resources into the repository system and how genetic material could exit the system. It provides a basis to start exploring the decisions that all committees will have to address. Briefly, the rectangles represent population size (e.g., live animals or germplasm), the circles represent decision-making points and red lines are information linkages.

Some key points to consider (represented by circles in the diagram are:

- Determination of genetic resources to place in the repository, based on population data and uniqueness of the genetic resource.
- How preserved germplasm will be distributed for research projects
- What sorts of health tests are required before placing germplasm into the repository?
- How will material that has been taken from the repository system be replenished?

Web Site: NAGP web pages are under development. You access the site at www.ars-grin.gov/nag/temp. In the following months we will use this location as a mechanism to distribute information. You are welcome to peruse the site for information and your feedback is encouraged.



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