

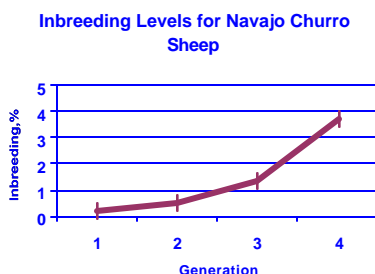
The National Animal Germplasm Program (NAGP) Program Update – April 1, 2001 USDA/ARS

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

The More We Know! The more we know about our animal genetic resources the more evident it is that there is a need for action. The scientists, non-governmental organization and industry representatives involved with NAGP have begun a national response to the management of animal genetic resources. Although we have had a rapid start in 2000 it is clear that we are only initiating this process and there is still a tremendous amount of work to do. The current problems in Europe with BSE and Foot and Mouth Disease clearly demonstrate how vulnerable our genetic resources are and underscore the need to comprehensively conserve animal genetic resources.

NAGP Symposium at ASAS/ADSA/PSA Meetings: Thanks to many NAGP species committee members there will be a symposium at this summer's Animal, Dairy and Poultry Science meetings. The symposium entitled "Conservation and Management of Animal Genetic Resources" is scheduled for Wednesday, July 25, from 8:00 am to 12:00 pm. The symposium will address topics ranging from advances in poultry cryopreservation, molecular approaches for determining breed uniqueness, and estimation of genetic relationships. Piter Bijma from Wageningen will lead off with a presentation entitled "Managing genetic diversity, selection and inbreeding in livestock". Each NAGP species committee will present an overview of their activities followed by a roundtable discussion.

Assistance with Live Animal Populations: The Navajo Churro sheep breed is one of the oldest breeds of domesticated livestock in North America. Although this is an old breed a formal breed association and registry was not formed until 1989. Over the past month Colorado State graduate student Norman Miwashe has been working with the Navajo Churro pedigree records. The goal is to determine levels of inbreeding for the breed and individual flocks. If there are potential inbreeding problems remedial strategies will be developed with the Navajo Churro Breed Association. The following graph shows results to date of how inbreeding has increased during the breed association's first four generations. As with the Holstein cow population inbreeding is increasing at an increasing rate.



National Resource Survey: The NAGP in conjunction with the American Livestock Breeds Conservancy (ALBC) is in the process of conducting national surveys to determine the population status of U.S. breeds. The initial surveys are for goats, swine and research chicken lines. The process of conducting the survey for all species and analyzing the information is targeted for completion in late 2002.



ALBC has completed the turkey survey. ALBC results found 20 non-commercial breeds which, based on population data, were categorized as follows:

Category	Study	Watch	Rare	Critical
Number of breeds	9	1	1	9

* Critical populations have less than 200 animal registrations.

Accession Status: During 2000 we initiated germplasm collections for chickens, beef cattle and sheep.

- The **University of California, Davis** has placed two lines of Targhee sheep into the repository; this collection consists of both semen and embryos.
- The chicken collection consists of semen from 40 different lines developed by **ARS/East Lansing** for use in researching economically important avian diseases.
- Two inbred lines of Hereford cattle have been added to the repository both lines have played important research and industry roles. The Prospector line developed by **Colorado State University** and the Line 1 developed by **ARS/Miles City**.

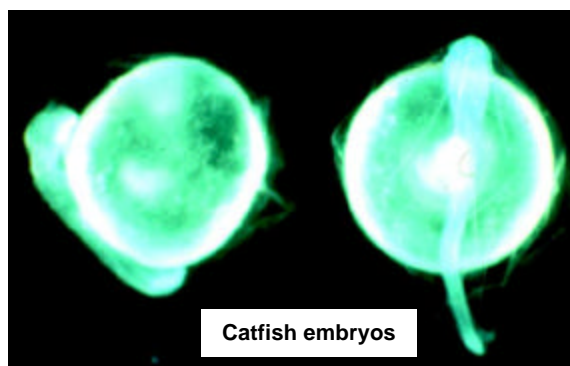
Accession Development: Several committees have initiated collection strategies and are in the process of acquiring germplasm for the repository.

- The Dairy Committee has initiated a process of working with commercial AI Studs to submit

germplasm from bulls of all dairy breeds as they enter progeny testing programs. ABS Global has signed the MOU with NAGP and will soon begin to ship semen to Fort Collins.

- The Small Ruminant Committee has initiated a collection of germplasm from the Warhill breed of sheep through Colorado State University. This collection is part of a larger strategy to collect fine woolled sheep from the western US.
- The Small Ruminant Committee has also initiated an effort to collect germplasm from Angora, Myotonic and Spanish goats in Texas. This collection effort involves three Texas universities as well as the Texas Department of Agriculture and the Mohair Council of America.
- The Swine Committee has initiated collections of research lines at the University of Nebraska and the Yorkshire breed.
- The Beef Cattle Committee has initiated discussions with the Hereford Association about developing a broad and historical collection of germplasm for this breed. It was decided that the germplasm collection at Clay Center would be split and a portion sent to Ft. Collins. This collection is comprised of 29 breeds of beef cattle.

Database/Information System Development: Erick Abadie, Andrea Lawrence and Julie Fleming have continued development of the NAGP/GRIN database. We have currently begun testing the component of the database that will allow us to enter germplasm sample information (e.g., where the sample is stored and how much material we have on an individual animal).



Aquaculture: The Aquaculture Committee members representing all aspects of aquaculture (finfish, mollusks and shellfish) met in January at the World Aquaculture Conference. The committee decided to form four subcommittees (warm water, cold water, mollusks and crustaceans). As with other species committees they decided to develop lists of existing lines, determining what strains are cryopreserved, identifying lines in need of cryopreservation and identification of research needs.

State of the World's Animal Genetic Resources: FAO has sent out invitations for governments to participate in the first global assessment of animal genetic resources. The United States has accepted this invitation and as a result over the next 12 months we will start developing the response to this request. In

preparation for this assessment FAO has been developing a response mechanism including software to assist countries in developing their response. Dave Notter (Chairman, Small Ruminant Committee) has been keenly involved in the development of FAO's assessment tools and will be working as a trainer at regional FAO workshops.

Policy Coordinating Committee: The NAGP Policy Coordinating Committee serves to coordinate and develop policies that cross species boundaries. The Committee consists of all species committee chairmen, ARS, NIH, ALBC and CSREES personnel. This committee met last November in Ft. Collins. Some of the issues discussed where:

- Development of a procedure that formally recognizes unique research populations.
- Determining how germplasm should be released from the repository for research or industry use.
- Development of a format for developing breed conservation plans.
- Lee Panella Chair of the Sugar Beet Committee discussed how crop committees function and incorporate research into their conservation efforts.

This committee will be working to finalize these issues at the next meeting.

Species Committees: Species committees have tentative meeting dates as follows:

- Beef – Beef Improvement Federation, San Antonio, TX. July 12
- Small Ruminants – ASAS/ADSA/PSA meetings, Indianapolis, IN. July 27
- Swine – TBA
- Dairy – ASAS/ADSA/PSA meetings, Indianapolis, IN. July 25
- Poultry – ASAS/ADSA/PSA meetings, Indianapolis, IN. July 26
- Coordinating Committee – ASAS/ADSA/PSA meetings, Indianapolis, IN. July 24

All meetings at the ASAS/ADSA/PSA meeting in will be in room 148 of the Indiana Convention Center.

Thanks to Committee Members: NAGP would like to thank all committee members for their time and commitment to this program during the past year.



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