NAGP Makes Room for Swine Germplasm

The National Animal Germplasm Program (NAGP) has officially added swine to its collection. Mandated by the U.S. Congress in 1990, the NAGP is located at ARS' National Center for Genetic Resources Preservation. Its first germplasm entry was 40 chicken lines cataloged in 2000. Consolidations in several meat-animal industries have led to concerns about there being less genetic diversity in swine.

By collecting swine germplasm, NAGP will help provide breeders the genetic tools needed to develop animals with important traits, such as disease resistance. Work is under way on a national swine breed survey.

NAGP researchers are looking for ways to improve use of super-cold temperatures to preserve germplasm. Today's cryopreservation techniques result in very low conception rates and small litter size compared to industry norms. The scientists want to improve long-term germplasm storage and better understand how it affects sperm and embryo viability. They will also study proper storage of germplasm for beef and dairy cattle, small ruminants, and aquacultured species. *Harvey D. Blackburn, USDA-ARS National Animal Germplasm Program, Fort Collins, Colorado; phone (970) 495-3268, e-mail hblackbu@lamar.colostate.edu.*

We're Getting New "Threads"!

Exceptionally soft bicomponent yarn is being spun with a new tandem spinning system. This patented system works 10 times faster than the conventional ring-spinning one. It's a combination of two different technologies: air-jet spinning and friction spinning. It greatly speeds up the process by which two types of fibers—or two strands of the same type of fiber, of the same or different quality—can be coaxially blended into a continuous yarn strand. By wrapping one fiber around another, a core-wrap yarn is formed that exhibits qualities inherent in both fibers. Often, the core material is a strong synthetic fiber that imparts such useful mechanical and functional properties to fabric as durability, dimensional stability, and wrinkle resistance. An outer wrap of cotton adds desirable comfort characteristics.

Fabric made with this tandem-spun yarn doesn't pill, since the core fiber—often a high-tenacity polyester that is prone to cause pilling—is almost completely encased in cotton, which doesn't pill. After heat-setting, this "thermoplastic" core fiber usually provides satisfactory shrink- and wrinkle-resistance to fabric, while the outer layer of cotton provides the softness and absorbency of a natural fiber. The tandem spinning technology is now available for licensing by textile processors. *Amar (Paul) Sawhney, USDA-ARS Cotton Textile Engineering Research Unit, New Orleans, Louisiana; phone (504) 286-4568, e-mail apsingh@srrc.ars.usda.gov.*

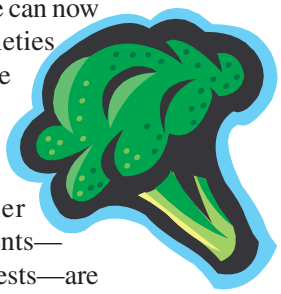
The Search for Salt Tolerance

A few years ago, eucalyptus trees seemed to offer promise as salt-tolerant plants that could draw up and use salty irrigation-drainage water. Although the trees survived, they used little of the saline water, so they didn't thrive and grow much.

Now attention's turned to finding salt-tolerant forages that would reduce the volume of salty drainage water while providing feed for grazing sheep and cattle. Researchers used an elaborate sand-tank system to test a variety of forage species. After ranking them by forage quality, production potential, and mineral ion accumulation, the scientists found that cultivars of alfalfa and tall wheatgrass performed best in the experiment. After completion of field tests and ruminant nutritional studies, it may be possible to recommend forages that will not only feed grazing animals, but also help solve the problem of saline irrigation water disposal. *Catherine M. Grieve, USDA-ARS George E. Brown, Jr., Salinity Laboratory, Riverside, California; phone (909) 369-4836, e-mail cgrieve@ussl.ars.usda.gov.*

Pyramid Scheme for Better Broccoli

Concerns about pesticide use have led breeders to develop broccoli varieties with natural resistance to downy mildew. Growers formerly dependent on fungicide applications to prevent this costly scourge can now simply grow varieties resistant to the fungal cause, *Peronospora parasitica.* But fungi and other plant disease agents—as well as insect pests—are notorious for developing an ability to overcome resistance in plants, over time. So it's very good news that scientists have found genetic markers that easily identify broccoli varieties with natural resistance to downy mildew. These markers will aid development of future varieties with more durable resistance.



The long-range goal is to gang, or "pyramid," several resistance genes into new broccoli varieties, to build in multigene protection that will be much harder for disease-causing microbes to overcome. Another goal is to improve understanding of how plants inherit their resistance. By studying how it works with one or more particular varieties, scientists will be able to devise strategies for breeding resistance in new and better broccolis—as well as in related cole crops, such as cauliflower and cabbage. *Mark W. Farnham, USDA-ARS U.S. Vegetable Laboratory, Charleston, South Carolina; phone (843) 556-0840, e-mail mfarnham@awod.com.*