

## Soy Supplements and Bone Health

About 20 million American women have osteoporosis, a thinning of the bones that increases risk of bone fracture. Postmenopausal women are particularly susceptible, because their estrogen production has stopped. Estrogen plays an important role in slowing bone loss. So after menopause, bone loss can increase dramatically, and some women and their doctors may consider estrogen replacement therapy. Estrogen replacement therapy has been shown to reduce bone loss and fractures, but it carries some health risks.

As an alternative, taking over-the-counter soy isoflavone supplements is becoming common among postmenopausal women. But there is no documented scientific evidence of either their long-term safety or efficacy in preventing osteoporosis.

William Wong, a nutritionist with the Children's Nutrition Research Center (CNRC) at Baylor College of Medicine in Houston, Texas, aims to get some answers to those two important questions. He is leading a \$4.5 million national study called OPUS (Osteoporosis Prevention Using Soy) that will determine the benefits, safety, and correct dosages of soy isoflavone supplements to prevent osteoporosis in postmenopausal women.

Begun in the spring of 2003, the project will enroll 400 women divided among CNRC, the University of Georgia in Athens, the University of California at Davis, and the Kaiser Foundation Research Institute in Oakland, California, and will follow them for 2 years. CNRC is the coordination center, and Wong is the project director.

Though earlier studies have indicated that soy isoflavones may help prevent osteoporosis and reduce symptoms of menopause, these studies were usually short term and involved only a small number of volunteers. OPUS is a long-term study of whether natural soy isoflavones really are beneficial and safe. A third of the women will receive isoflavone supplementation at 80 milligrams per day, a third will receive 120 milligrams per day, and the remaining third will receive a placebo.

Confirming skeletal benefits from soy isoflavone consumption could translate into reduced health care costs for treating osteoporosis and increased production, sales, and consumption of an important U.S. agricultural product. As a part of this study, funded by the U.S. Department of Agriculture, findings will be disseminated to researchers, educators, health care professionals, and consumers through Texas A&M University and the Cooperative Extension System.

CNRC is operated by Baylor College of Medicine in cooperation with Texas Children's Hospital and the Agricultural Research Service.—By **Alfredo Flores**, ARS.

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## Tick-Control Methods Head to Scotland

Entomologist Mat Pound and agricultural engineer Allen Miller, at ARS's Knippling-Bushland U.S. Livestock Insects Research Laboratory, Kerrville, Texas, are well known for their research to control ticks on white-tailed deer and other wild ungulates. They have developed several control methods including medicated bait, the 4-poster topical applicator, injectable medicated microspheres, an automatic collaring device, and a safe and efficient deer capture and handling system. These technologies offer potential solutions to the problem of treating deer to rid them of blacklegged ticks and lone star ticks, which transmit agents causing Lyme disease, human ehrlichioses, human babesiosis, and several other diseases.

Pound and Miller recently made a trip to Scotland to meet with Adam Smith, senior scientist at Scottish Upland Research in Newtonmore. That research agency serves as the scientific wing of the Game Conservancy Trust (GCT) in central Scotland. The two ARS scientists were invited to give presentations on their work to the Tick Working Group of the GCT and to a general meeting of 75 members of the trust. Those attending were mainly landholders and gamekeepers of large estates—including the Prince of Wales and the Marquis of Lansdowne—who have deep interests in wildlife conservation.

Disease-carrying ticks have become an increasing problem on large estates, where red deer populations are thriving. Ticks are brought into the areas on deer. Then, the ticks feed on mountain hares and become infected with a virus. Later, if they feed on chicks of the Scottish red grouse, they transmit the deadly virus to the young birds. Red grouse is the most popular game bird in Scotland, where hunting on the large estates is both a cherished sport and of great economic importance.

Now the tick may be about to meet its match. At least that is what Pound and Miller hope to accomplish through collaborative efforts with GCT scientists. The two ARS researchers want to see whether the medicated corn, 4-poster, or other technologies can be adapted to the Scottish environment to control the ticks and save red grouse populations.

In the spring of 2003, the Scottish scientists trapped and treated adult red grouse with medicated leg bands in hopes that the treatment would prevent ticks from biting newly hatched nestlings. In August, some estates were holding their first red grouse drives in several years to see whether the populations had increased. Scottish observers anticipate increased numbers of grouse this year. But it's premature to claim success until quantitative data are available.—By **Alfredo Flores**, ARS.

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