St. John's wort collection mined for its medicinal value

March 30 2010

A unique collection of St. John's wort (*Hypericum*) curated by Agricultural Research Service (ARS) scientists in Ames, Iowa, is providing university collaborators with genetically diverse, well-documented sources of this herb to use in studies examining its medicinal potential.

In collaboration with Mark Widrlechner, a horticulturist with the ARS crop genebank at the North Central Regional Plant Introduction Station in Ames, scientists from the Center for Research on Botanical Dietary Supplements (CRBDS) are screening 180 germplasm accessions of St. John's wort for biologically active compounds. Some may be worth evaluating further in clinical trials for their potential to combat viral infections, reduce inflammation or improve digestive health.

Established in 1948, the ARS Ames crop genebank curates more than 50,000 accessions of ornamental plants, maize, oilseeds, vegetables and other crops, and provides them to researchers for many applications. Accessions with medicinal or nutraceutical value include Echinacea (purple coneflower), Hypericum, Prunella (self-heal) and Actaea racemosa (black cohosh). ARS horticulturist Luping Qu curates the collection and Widrlechner coordinates its use for research at CRBDS, one of six Botanical Research Centers funded by the National Institutes of Health from 2005-2010.

The *Hypericum* collection at Ames was started in the 1990s and today encompasses about 60 species collected from around the world. This

diversity has enabled investigations of genetic, environmental and developmental factors affecting the quantity and quality of bioactive compounds, as well as their modes of action.

Of particular interest is how these compounds interact, and whether those interactions are critical to human health benefits. In a recent issue of Pharmaceutical Biology, researchers noted that combinations of four compounds from St. John's wort (amentoflavone, chlorogenic acid, pseudohypericin and quercetin) were more effective at reducing inflammation in mouse macrophage assays than when each was used alone.

Provided by United States Department of Agriculture