

TO: Members of the Subcommittees on Agricultural Appropriations, U.S. House of Representatives and U.S. Senate
FROM: ASTA Corn & Sorghum Basic Research Committee
DATE: March 14, 2011

SUBJECT: **STRENGTHENING OF USA CORN HYBRIDS BY ENHANCING THE CORN GERmplasm BASE**

SUMMARY: The ASTA Corn and Sorghum Basic Research Committee requests the 112th Congress of the United States to add funding of \$1 million, in addition to the \$1,587,800 appropriated in FY2011, for a total annual budget of \$2,587,800 for this corn germplasm enhancement project, beginning with the FY2012 federal budget. Specifically, additional funds are requested for the Raleigh, NC, and Ames, IA, Germplasm Enhancement of Maize (GEM) projects to fully support research project needs.

1. Corn (also known as maize) is a key resource for food, feed, industry, and export. Corn is the major crop in the USA, with over 80 million acres planted and value of about \$50 B per year; U.S. and global demand is increasing, and the U.S. supplies about 60% of world exports. GEM is aligned with the national research priorities of crop protection and production, new breeding strategies, sustainability, adapting to climate change, human nutrition and obesity control, and biofuels development.

2. U.S. corn production is based on only two races of maize from more than 250 New World races. This lack of genetic diversity renders the U.S. corn crop particularly vulnerable to attack by exotic diseases. Genetic diversity is necessary to protect the stability of U.S. corn production.

3. Lack of adaptation of exotic corn germplasm to U.S. growing conditions is a major challenge in identifying and utilizing useful exotic corn. Genes from unadapted exotics can improve productivity and pest resistance (key challenges due to climate change and international grain movement), grain characteristics, biofuels production, and traits important to human health and nutrition

4. A unique collaboration among USDA/ARS, university, and private seed company researchers, GEM focuses on adapting exotic germplasm and identifying useful genetics to develop new hybrids. Interest in GEM breeding material continues to grow due to its performance stability and other traits needed to deal with climate change, extreme seasonal heat and rainfall variation, fertilizer availability and cost, and bio-fuel research, as knowledge of traits and pathways crucial to sustainable production increases.

5. We greatly appreciate the Federal commitment for funding GEM, beginning with appropriations in the FY 1995 federal budget. Additional appropriations, less recent rescissions, have provided annual funding of \$1,245,700 to the Ames, IA, and \$342,100 to the Raleigh, NC, GEM projects for a preliminary total estimate of \$1,587,800 for FY2011. This funding, in addition to supporting the two main USDA/ARS GEM locations has supported USDA/ARS and/or University research partners based in Delaware, Georgia, Indiana, Illinois, Iowa, Kentucky, Louisiana, Michigan, Minnesota, Mississippi, Missouri, Nebraska, New York, North Carolina, North Dakota, Ohio, Pennsylvania, South Dakota, Tennessee, Texas, and Wisconsin to achieve GEM research objectives.

6. Private industry provides over \$500,000 of in-kind support annually for this effort in addition to industry germplasm contributions currently valued at over \$3 billion.

7. The 2000 USDA's review of the GEM project, recommending \$2 million of annual funding, has been partially realized; however, costs also increased. Increased funding would support cooperative public research designed to address germplasm evaluation, breeding and trait development in a targeted manner. It also trains students who will become future researchers whose skills are in critically short supply. As costs of conducting research have increased, we recommend a budget for FY2012 of \$2,587,800, which is \$1 million over the currently appropriated funding (\$1,587,800), with \$776,340 for North Carolina and \$1,811,460 for Iowa operations.