

December 7, 2009

**To: NIFA Director Roger Beachy**

**Re: Recommendations for Establishment of AFRI Conventional Plant and Animal Breeding Programs**

Dear Director Beachy:

Thank you for meeting with us last week to discuss sustainable agriculture research priorities at NIFA and other USDA-REE agencies. In response to your request, below we present recommendations for the establishment of conventional<sup>1</sup>[1] plant and animal breeding programs within the 2010 AFRI RFA. We are joined in this response by several of our colleagues.

We make these recommendations because we are at a critical juncture in our nation's breeding capacity and expertise, the outcome of which will have implications for national and global food security, our ability to adapt to and mitigate climate change, and the nutritional value of our food supply. If we invest today to support public plant and animal breeding research and programs, the outcomes tomorrow will be cultivars that ensure greater food security, improved food quality, and enhanced ability to adapt to a changing climate.

In passing the Food, Conservation, and Energy Act of 2008, Congress recognized the decline and dearth of federal investment in public breeding and its importance in addressing national and global challenges such as ensuring food security. Congress listed for the first time "conventional" breeding within both the "Plant Health and Production and Plant Products" and the "Animal Health and Production and Animal Products" priority areas of AFRI.<sup>2</sup>[2] Additionally, Congress elaborated on its concern in the bill's Statement of the Managers<sup>3</sup>[3] and in subsequent FY 2009 and FY 2010 agriculture appropriations bills.

### **General Recommendations**

- Establish two separate programs, one for public plant breeding and the other for public animal breeding, both with annual funding.
  - While in a particular year the RFA should focus on breeding needs and outcomes in specific plant and animal species, the RFA over several years should address needs and outcomes throughout the spectrum of agricultural breeds and varieties.
  - The objectives of the programs should be to develop new publicly held cultivars, breeding lines, and improved breeds. Sub-objectives should include breeding for:
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- improved sustainability and productivity;
  - adaptation to biotic and abiotic stresses;
  - adaption to climate change and ability to sequester carbon;
  - adequate performance under conditions of suboptimal fertility;
  - enhanced nutritional qualities;
  - reduction of inputs or practices that have an adverse impact on soil, water, or air quality;
  - improvements in public health; and
  - pest and disease resistance.
- The programs should also emphasize participatory breeding projects that include producers.

### **Recommendations for 2010 RFA**

For the FY 2010 AFRI RFA, areas of particular concern and focus (listed in priority order) include:

- Plants
- Breeding corn, wheat, and soybean cultivars with enhanced nutritional value, multiple resistance and tolerance to insect and disease problems and environmental stress, climate change adaptation, and improved response to lower input and organic systems.
  - Breeding vegetable varieties with enhanced nutritional value, improved response to reduced N inputs, adaptable to changing climate conditions, optimized for reduced tillage (e.g., faster early season N response to establish canopy), and suited to diversified rotations and to organic systems.
  - Breeding robust cover crops and forages specifically targeted to work well for conservation farming systems promoted by NRCS' farm bill conservation programs including continuous cover cropping, resource-conserving crop rotations, management-intensive rotational grazing, and organic cropping and livestock systems.
- Animals

- Swine breeding for disease resistance and development of breeds that are naturally able to resist disease without the need for prophylactic antibiotic use.
- Breeding for parasite resistance in small ruminants.
- Dairy breeding for grass-based, carbon-friendly management-intensive rotational grazing systems.

### **Marker-Assisted Selection Techniques**

As we interpret the 2008 Farm Bill statutory and report language regarding conventional plant and animal breeding, we believe that marker-assisted selection (MAS) technology is not incompatible with this definition, but we stress that *it should not be a requirement for a successful grant.*

However, we strongly believe that genomics is not specified within the Farm Bill language requirements, and that funding for conventional plant and animal breeding should remain distinct from genomics grant streams.

### **Ten Year Awards**

We urge that grants awarded for conventional plant and animal breeding be awarded on a 10-year grant term (or renewable 5-year awards), in recognition of the long-term nature of this research. This is consistent with the 2008 Farm Bill Conference Report language, which states that:

*“... the Managers are aware that there are areas of research where longer-term grants are needed, such as conventional plant and animal breeding, environmental research, and nutrition research. The Managers expect the Secretary to use 10-year grant terms only when it is critical for long-term systems research.”*

### **Strengthening and Post-Doc Grants**

In addition to the priorities for the conventional plant and animal breeding programs, we recommend giving a specific focus to conventional breeders in both the AFRI Strengthening Grant and Postdoctoral Fellowship Grant categories.

Thank you for considering our recommendations as you establish conventional plant and animal breeding programs within AFRI. The outcomes of establishing vibrant and robust programs in these two areas will feed directly into the priorities that the Department has established in ensuring food security and food safety, as well as in the adaptation to climate change and carbon sequestration.

Sincerely,

National Organic Coalition

National Sustainable Agriculture Coalition

Organic Farming Research Foundation

Seeds and Breeds for the 21st Century Coalition

Union of Concerned Scientists

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4[1] Also commonly referred to as “classical” or “public” plant and animal breeding. We use the terms interchangeably in this letter.

5[2] Section 7406(b)(A)(iii) and (B)(iv) of the Food, Conservation, and Energy Act of 2008.

6[3] Statement of the Managers, p. 852-852, Food, Conservation, and Energy Act of 2008.

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