

NATIONAL ENVIRONMENTALLY SOUND PRODUCTION AGRICULTURE LABORATORY (NESPAL)

NESPAL is interdisciplinary in nature and research is conducted across several commodity areas. While all of NESPAL's research may not be classified under the broad areas of management and physiology, all areas are reported in this document to provide a comprehensive overview of this unit). **Craig Kvien (Chair of NESPAL, research is conducted by various scientists)**National Environmentally Sound Production Agriculture Laboratory (NESPAL) NESPAL is a horizontally structured, interdisciplinary research and education effort aimed at building a better environment for agriculture and rural America. Our research focus and projects strive to address some of the bigger picture issues facing agriculture with economics and environmental issues in concert - our simple answer to both is to improve efficiencies.

While difficult to categorize, most of the programs within NESPAL would fall under the following categories:

- Breeding and Genetics – Goal is to better understand how organisms, through genetic and non-genetic methods respond to their environment and how traditional and molecular breeding techniques can be used to improve these organisms.
- Precision Agriculture – Goal is to improve management tools, including information technologies, sensing and control systems, and other technologies that will provide a more effective use of resources and result in greater profitability.
- Water Use Efficiency and Environmental Quality – Goal is to aid in the development of agricultural systems that will improve the quality of the environment in and around agricultural land and rural communities.
- Human Capital Development (includes teaching and student programs)– Goal is to improve the opportunities and climate in rural communities that will enable them to attract and retain the human talent needed to keep them both economically and environmentally sound.
- Nature’s sensing systems – to learn more about how plants, microbes and animals sense the environment around them. From learning more about how they detect and react to extremely faint odors, diseases and other pests, electrical impulses, gravity, location, light, sound, temperature, moisture, humidity, texture and more.