- release and crop response. Agron. J. 93:929–935.
- Ritchie, J.T., U. Singh, D.C. Godwin, and L.A. Hunt. 1989. A User's Guide to CERES-Maize V2.10. International Fertilizer Development Center, Muscle Shoals, AL.
- Ssali, H., and S.O. Keya. 1983. The effect of phosphorus on nodulation, growth and dinitrogen fixation by beans. Biol. Agric. Hort. 1:135–144.
- Ssali, H., S.O. Keya, and V.R. Balisundaram. 1981. Influence of phosphorus application rates and placement on the nodulation, growth and yield of beans and soybeans grown at two nitrogen levels. Kenya J. Sci. Tech. 2:91-98.
- 12. Stoorvogel, J.J., E.M.A. Smaling, and B.H. Janssen. 1993. Calculating soil nutri-

- ent balances in Africa at different scales I. Supranational scale. Fert. Res. 35:227-235.
- Wortmann, C.S., and C.A. Eledu. 1999. Uganda's Agroecological Zones: A Guide for Planners and Policy Makers. International Center for Tropical Agriculture (CIAT), Kampala, Uganda.
- 14. Wortmann, C.S., M. Fischler, F. Alifugani, and C.K. Kayuki. 1998. Accomplishments of participatory research for systems improvement in Iganga District, 1993–1997. Occasional Paper No. 27. International Center for Tropical Agriculture (CIAT), Kampala, Uganda.
- Wortmann, C.S., and C.K. Kayuki. 1998.
  Nutrient balances and expected effects of alternative practices in farming systems of Uganda. In E.M.A. Smaling (ed.). Nu-

- trient Balances as Indicators of Productivity and Sustainability in Sub-Saharan African Agriculture. Agric. Ecosys. Environ. 71:115–130.
- Wortmann, C.S., and C.K. Kayuki. 2000. Tree legumes in medium-term fallows: N<sub>2</sub> fixation, nitrate recovery and effects on subsequent crops. African Crop Sci. J. 8:263-272.
- 17. Wortmann, C.S., B.D. McIntyre, and C.K. Kayuki. 2000. Annual soil improving legumes: Agronomic effectiveness, nutrient uptake, nitrogen fixation and water use. Field Crops Res. 68:75-83.
- Wortmann, C.S., H.F. Schnier, and A.W. Muriuki. 1996. Estimation of fertilizer response of maize and bean intercropping using sole crop response equations. African Crop Sci. J. 4:51-55.



# WALLACE CENTER NEWS

## Harwood Joins Winrock Board of Directors

Richard Harwood, the C.S. Mott Foundation Chair of Sustainable Agriculture at Michigan State University, has been elected to the Winrock International Board of Directors. Until late 2001, he had served on the Editorial Advisory Board of the Wallace Center's American Journal of Alternative Agriculture.

#### Winrock Formalizes Ecosystem Services As Business Unit

Winrock International has formalized its Ecosystem Services activities as a business unit. The objective of Ecosystem Services is to provide tools to further Winrock's mission by monitoring land use and environmental change to improve resource management, and thereby strengthen the rural economies that depend on sustainable forests, wetlands, watersheds, and agricultural production systems. For more information, visit http://www.winrock.org/ecosystemservices.org.

### USDA Awards \$2 Million to Wallace Center, Several Universities

The USDA has awarded \$2 million to the Wallace Center and several other entities for a national study of university-industry relationships in agricultural biotechnology. Others included in the grant are Portland State University, where the project will be based, Oregon State University, University of California Davis, Clarkson University, and the Farm Foundation

The purpose of the three-year project is to assess university-industry research, licensing, and other partnerships, with special emphasis on the mix of public and private goods provided through agricultural biotechnology. Its findings will be used to identify problems and potential policies to foster the development of products with traits that promote widespread public benefits.

The project's director will be Dave Ervin, a professor in Portland State University's Environmental Sciences and Resources program, and a senior policy

analyst at the Wallace Center; he can be contacted at (503) 725-3935, e-mail der vin@winrock.org.

#### Patrick Madden, Sustainable Agriculture Pioneer, Dies of Cancer

Patrick Madden, a pioneer of sustainable agriculture in universities, the USDA, and worldwide, died recently at his home in Washington State after battling brain cancer since last February. Madden was the first director of the USDA's SARE program, served as president of the World Sustainable Agriculture Association, and was the author of numerous books and publications about sustainable agriculture.

He was also a member of the Editorial Advisory Board of American Journal of Alternative Agriculture, the Wallace Center's quarterly, peer-reviewed journal of research on sustainable and alternative agriculture. His family requested that in lieu of flowers, contributions be made in his name to an organization that supports his life's work.

Volume 16, Number 4, 2001 167