Introduction

P.J. Gregory

It is a great pleasure to introduce this Annual Report as the incoming Director. I began work at SCRI on 1 April 2005, following almost 25 years of pursuing a career at the University of Reading which was interrupted by about five years in Australia in the early 1990s. It is a delight to be part of a strong research institute that delivers excellent strategic research and simultaneously works in partnership with a range of commercial and public bodies to develop products and services of value to farmers, food processors, retailers and the general public. This unique combination of knowledge, products and services is a great testament to the work and foresight of my predecessor, Professor John Hillman, who retired after 19 years as Director on 31 March 2005. Many people conveyed their appreciation to John for all his efforts on their behalf over a prolonged period at the time of his retirement, but I should like to add my personal thanks to John for the excellent inheritance that I have received.

So, the period covered by this Report has seen change in the senior management, and many other changes will be evident throughout the body of the Report. First, and most obviously, I have made no attempt to emulate the thorough accounts of my predecessor about the state of agricultural research locally and globally, choosing instead to provide a brief statement of context for the Institute's work. Second, the period covered by the Annual Report has been changed from a financial year basis to the calendar year; this Report covers the changeover period so describes work conducted in the period 1 April 2004 to 1

October 2005. Third, following the approval of our Corporate Plan 2006-2011 by the Governing Body, we have restructured our senior management team to form a Senior Management Board, and reorganised our science into four programmes in which we believe we have realistic prospects of either sustaining or achieving excellence. Finally, and probably most importantly, 2005 has seen a great deal of staff time expended on developing ideas for research over the next five years that will contribute to the commissioned research programmes of our major funder, the Scottish Executive Environment and Rural Affairs Department (SEERAD). This change in the method of funding from block grant to commissioned research programmes heralds a new relationship between the Institute and SEERAD that follows directly from the revised approaches to supporting research outlined in "Strategic Research for SEERAD: Environment, Biology and Agriculture 2005-2010". The programmes, and their constitutive workpackages, provide a greater stimulus to scientists to work with members of other research institutes in Scotland to deliver the outcomes required and will, over time, lead to closer working relationships between research institutes and with universities.

Amidst this changing research and organisational landscape we have, however, continued to produce excellent new science of high impact, often in cooperation with other national and international partners. For example, the successful genome sequencing of the phytopathogen *Erwinia carotovora* (causing blackleg) and the identification of pathogenicity determinants released by the oomycete *Phytophthora infestans* (causing late blight) that are recognised by host defences, mark important steps in the Institute's research to develop potatoes resistant to these diseases. Similarly, phylogenetic analysis of accessions from the Commonwealth Potato Collection held at SCRI, together with accessions from the United States Potato Genebank, overturned previous hypotheses to support a single origin for cultivated potato located in the broad area of southern Peru.

Increasingly our research is related to government policy considerations, especially in relation to aspects of biodiversity on arable land. Research conducted as part of the field scale evaluations of genetically modified herbicide-tolerant (GMHT) maize showed that the forthcoming withdrawal of triazine herbicides would reduce, but not eliminate, the benefits for arable biodiversity of GMHT maize compared to conventionally managed maize crops. Our work to deliver healthy and nutritious foods to the public has also continued apace, with studies into the regulation and manipulation of carotenoid biosynthesis leading to better understanding of their metabolism in plants and realistic prospects for enhancing their content in potato.

We have also continued to develop new products in commercial partnerships mediated by Mylnefield Research Services Ltd. For example, in collaboration with one of our commercial partners, Greenvale AP, three new potato cultivars were nationally listed and protected by plant variety rights (Vales Sovereign, Vales Everest and Vales Emerald). Greenvale AP has high expectations of these varieties in the fresh and processing markets both in the UK and overseas. Mylnefield Lipid Analysis has expanded rapidly during 2005 to become the UK's leading independent laboratory for lipid analysis in food supplements, functional foods, blood samples for clinical trials and other pharmaceutical applications. Such partnerships are highly valued and, together with field days, exhibitions and talks to the land-based industries and the public, provide a rich network for knowledge exchange and transfer. These interactions benefit the Institute as well as many individuals and organisations.

This report highlights a small selection of our activities. I am delighted to be leading such a dynamic group of people and hope that you will enjoy reading about our activities.