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Genetic revolution overdue at the USDA

Agricultural research is being neglected by the US federal government, despite its clear relevance to economic prosperity, social development and environmental stewardship.

The United States Department of Agriculture (USDA) has, more than most agencies of the US government, a history of achievement that demands respect. The department's outreach to farmers, particularly in the aftermath of the dustbowl and depression of the 1930s, brought cheap food to America's kitchen tables and helped build the mid-western plains into the bread-basket of the world.

But, 45 years after Watson and Crick transformed our understanding of the nature of living things, the USDA's approach to scientific research remains firmly rooted in that previous golden era. The structure of its $1.5-billion annual research programme carries little recognition of the genetic revolution, even as the first agricultural products of that revolution sweep across the rice, soybean, wheat and corn fields of the nation. The importance of the change is better recognized on Wall Street than at either end of Pennsylvania Avenue. But, as the potent symbiosis between the National Institutes of Health (NIH) and the US biotechnology sector amply demonstrates, government can vastly accelerate the progress of biotechnology by supporting basic research.

In plant science, this isn't happening: the USDA's support for basic research is flat, its grants are each too small, and it allows overhead rates so miserly as to effectively discourage university participation in its programmes (see page 210). The USDA should be leading a great investigation of plant genetics and a drive to sequence the genomes of both scientifically interesting and economically significant plants. But it has instead fallen to the National Science Foundation — at the rude insistence of one senator, Christopher Bond (Republican, Missouri) — to initiate the new plant genome initiative (see *Nature* **388,** 309; 1997).

Part of the problem is political. The USDA has a sprawling empire of special interests to tend. Agricultural research has never been fenced off from those interests, as the NIH is from the rest of the Department of Health and Human Services. To judge from the track record of the respective arrangements, it ought to be.

USDA also has a strong tradition of operating its own research centres and directly supporting local agricultural colleges. Sadly, but perhaps inevitably, these institutions have never taken kindly to the allocation of research money on a fully competitive basis, fearing that too many of the grants would end up at major research universities. For decades, farmers, agricultural colleges and congressmen from agricultural districts (who naturally dominate the committees controlling USDA) have often found themselves fearing scientific excellence and the advent of molecular biology, when it would have been in their best interests to embrace both.

Those fears are waning now and most of the agricultural schools have warmed to genetics, genomics and competitive peer review. Agribusiness has sought to persuade Congress of the value of basic research to the entire agricultural enterprise. It has found allies, such as Bond and Senator Richard Lugar (Republican, Indiana), chair of the Senate Agriculture Committee, who has proposed and enacted a law that would inject mandatory funds — money not subject to yearly haggling by the appropriations committees — into agricultural research.

This manoeuvre is proving difficult to execute, however, and it isn't clear that the White House will go out of its way to secure its success. This administration has, in fact, shown little interest in agricultural research. Yet there exists a serious imbalance between its strategic significance and the resources that are made available for it. It is true that the public can't see the need for agricultural research so vividly as it sees the need for health research, but the requirement is real enough, if the world is to feed itself without destroying its natural environment. When Neal Lane is confirmed as President Bill Clinton's new science adviser, as he will be very shortly, he should treat the matter as an urgent priority. □

A Wellcome break for science

The significant boost in funds for UK science is a triumph, above all, for the Wellcome Trust.

Coming hard on the heels of the expressed determination of President Bill Clinton to provide more support for science, this week's announcement by the British government of a major boost in science funds (see page 209) sends a positive signal to researchers and governments everywhere. Moreover, it has the additional strength of being a firm three-year commitment, rather than subject to the annual wrangling that occurs in the US Congress.

The message is that long-term commitment to fundamental science is essential if you want to help the quality of your citizens' lives to improve. That message appears to have been successfully driven home to the people who really mattered — UK Treasury ministers — by learned societies, lobbyists, such as Save British Science, pharmaceutical companies and, by no means least, by the Office of Science and Technology on behalf of the research councils. As we go to press, the signs are that the university funding councils will at the least continue to be well supported.

But the Wellcome Trust's role has been crucial. With the trust's annual funding of science in the region of almost £300 million (US$490 million), it was all too tempting for the government to try to offload some of the responsibility for increased support for basic research. To her credit, the trust's recent head, Dame Bridget Ogilvie, would have none of it. Partly as a result, the trust has been able to play a central role in leveraging increased government support for world-class science in Britain (it has no obligation to restrict its activities there). Research itself will be immeasurably healthier as a result. □