

Study: Scientists Barter Knowledge, Not Fees, in Exchange for Genetic Resources



Research Norms Possibly at Risk Under New UN Pact

Sharing genetic material among food and agricultural researchers is largely an informal practice with few if any related fees, but in exchange, sources expect that colleagues will share the project's results or other significant research support.

That's a central finding of a recent study by scientists at University of Illinois at Chicago, who surveyed about 1,500 U.S. researchers to assess the importance of international genetic resources – valuable biological material such as food safety pathogens – to the nation's agricultural sector.

The timing of the study is critical because United Nations rules governing such exchanges are poised to change, possibly impinging U.S. agricultural research.

Under the Nagoya Protocol, a UN agreement passed in late 2010, governments will establish institutions to strictly manage the exchange process and ensure shared benefits. Among other steps, researchers seeking genetic material in countries that ratify the measure will be required to obtain permission

through official channels, agree on formal terms of exchange and negotiate compensation.

But according to results from the new survey, most U.S. government and university scientists currently don't operate that way.

Researchers pay a premium for material in just 4 percent of cases. Indeed 70 percent of the time sources cover the costs themselves, let alone charge a fee.

In addition, researchers report that only about one-third of projects require formal contracts (called Material Transfer Agreements) to access the material, regardless if the source is foreign or not. Likewise, more than 80 percent of scientists say that securing formal permission (Prior Informed Consent) for international material is either not mandated or a perfunctory step.

According to UIC's Science, Technology and Environment Policy Lab, which conducted the survey, the results depict an informal culture of unofficial, open scientific exchange that sharply contrasts with what the Nagoya Protocol seems to prescribe.

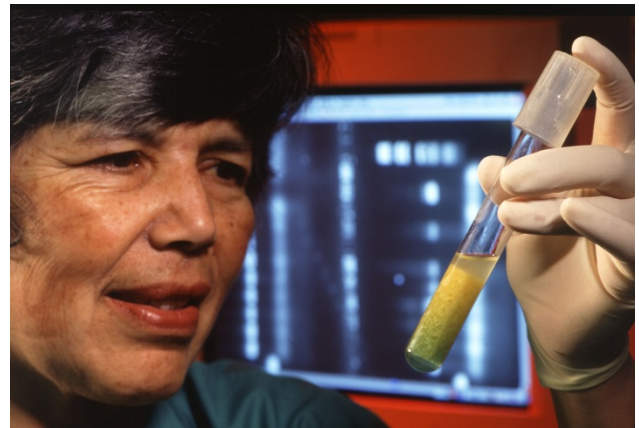
Agriculture scientists have expressed concern that in such a fluid environment, new institutions charged with creating and enforcing regulation – as outlined in the UN pact – could have a chilling effect on their research.

UIC's study (which drew from four research communities: aquatics, insects, livestock and microbes), offers other clues that lab-to-lab exchange remains informal in the U.S. agriculture sector. Nearly two-thirds of the time researchers source genetic material from close colleagues, both domestic and foreign.

Perhaps more telling, the survey shows that projects involving genetic resources yield a variety of rich outcomes besides patent applications. Only a fraction of projects (7 percent) target intellectual property rights for the purpose of licensing and marketing products.

In fact, concern about biopiracy – a practice where companies freely collect genetic material abroad that results in billion-dollar products – is largely unwarranted in the agriculture sector, UIC researchers explain. Rather study evidence points to a broad range of shared scientific outcomes such as knowledge exchange and publications.

Also instead of fees for use, most sources expect one or more knowledge-based, in-kind payments, demonstrating a spirit of reciprocity and respect for long-term professional relationships. According to the survey, forms of reimbursement include project results (in 59 percent of cases), research services (24 percent), material storage (16 percent), and education or training (15 percent).



The Nagoya Protocol, however, could change all that. As countries around the world start to ratify and implement the treaty, U.S. agriculture scientists worry that the international measure's focus on property rights will produce a rigid system of genetic material regulation that overlooks current U.S. practices and the value of non-economic benefits.

In turn, both U.S. and global food interests could be damaged. According to UIC's survey results, U.S. research projects with access to genetic material (foreign or domestic) consistently discover improvements for agricultural productivity, food safety, and animal and plant health.

Separately, the project also examines researchers' exchange patterns to understand the flow of genetic material across borders.

Findings from the three-year study will be presented July in Rome to the UN Food and Agriculture Organization.

The Science, Technology, and Environment Policy Lab conducts policy relevant research at the confluence of science and the environment. Its funded research projects help train a new generation of multinational and multidisciplinary scientists. Information about this and other research is found at <http://www.uic.edu/orgs/stresearch>.