Free as in Speech, Not as in Beer: **The Open Source Seed Initiative**

Paper prepared for the Organic Seed Growers Conference, Corvallis, OR, January 30-February 1, 2013/4

Jack Kloppenburg, University of Wisconsin-Madison
Jahi Chappel, Institute for Agriculture and Trade Policy
Micaela Colley, Organic Seed Alliance
Irwin Goldman, University of Wisconsin-Madison
Claire Luby, University of Wisconsin-Madison
Tom Michaels, University of Minnesota
Frank Morton, Wild Garden Seed
Michael Sligh, Rural Advancement Fund International-USA
Tom Stearns, High Mowing Organic Seeds

Corporate appropriation of plant genetic resources, development of transgenic crops, and the global imposition of intellectual property rights are now widely recognized as serious constraints on the free exchange of seeds and the development of new cultivars by farmers, public breeders, and small seed companies. Whatever their many differences, farmers of *all* types and in (almost) *all* places find themselves confronting Monsanto (and/or its corporate analogs) in similar fashion, with similar implications for their access to and use of seed. Plant breeders in public institutions, breeders in small seed companies, and farmer-breeders now find themselves in a position very similar to that of farmers. Increasingly, their access to genetic material, and even breeding methods, are constrained by the proliferation of intellectual property rights which are concentrated disproportionately among a narrow set of large and powerful firms. The debilitating effect of such limitations on these breeders' "freedom to operate" is accompanied by declining public funding and by institutional pressures to shape research in ways that complement – rather than compete with or provide alternatives to – the objectives and interests of the "Gene Giants." For at least some breeders, the mismatch between their normative commitment to public service and the demands for accommodation with industry is a motivation to seek another path.

The example of the "open source" software sector appeared to offer such a path. The legal tool that creates this path is a license, a form of contract. Open source software is copyrighted and then made available under a license that permits further modification and distribution as long as the modified software is distributed under the same license. This arrangement produces a "viral" effect that, critically, enforces continued sharing as the program and any derivatives and modifications are disseminated. Also critically, the virality of the license also prevents appropriation by companies that would make modifications for proprietary purposes since any software building on the licensed code is required by the license to be openly accessible. This feature – called "copyleft" – is what distinguishes "open source" from mere "open innovation." Thus, software developed under an open source license is released not into an open innovation/open access commons, but into a "protected commons" populated by those who agree to share but effectively inaccessible to those who will not.

Legal and operational mechanisms drawn from the open source software movement have been proposed for deployment in plant breeding. Open source licenses mandate freedom of derivative

use ("free as in speech") but do not prohibit market sale ("not as in beer"). In the United States, an Open Source Seed Initiative (OSSI) has been organized by a working group of plant breeders, farmers, non-governmental organizations and sustainable food system advocates. OSSI promotes innovative plant breeding that produces resilient and productive cultivars adapted to a multiplicity of sustainable agroecosystems. It works to encourage and reward the sharing rather than the restriction of germplasm, to revitalize public plant breeding, and to integrate the skills and capacities of farmers with those of plant scientists. It was anticipated that open source licenses could be developed that would preserve the right to use material for breeding and the right of farmers to save and replant seed by creating a "protected commons" populated by farmers and plant breeders whose materials would be freely available and widely exchanged but would be protected from appropriation by those who would monopolize them.

The actual process of fashioning an effective open source license for plant germplasm has proved to be more complicated than OSSI members had hoped. At a practical level, OSSI has encountered a variety of technical, legal obstacles to drafting workable licenses that has made us rethink our relative emphasis on the normative goal of reintroducing an ethos of sharing for germplasm exchange versus the pragmatic goal of creating a legally enforceable mandate for sharing. At a more fundamental level, we have encountered a challenge related to commercial deployment of "open source" material. While OSSI breeders are normatively disposed to a maximally unencumbered flow of plant genetic resources, they are now embedded in a market system in which they feel they have no option but to participate. Consequently, there is interest in developing a royalty-bearing license as well as a "free seed" license. What makes both licenses "open source," according to OSSI's thinking, is the "copyleft" requirement in both licenses that all derivative lines and combinations of the licensed material also be free for breeding and seed saving.

As a result, there has been in OSSI a significant tension between two tendencies: one for completely unencumbered, "free" seed, and one for seed carrying some obligation for reward to the breeder. This tension is manifest not only between breeders, but also within each breeder depending on the type of material in question (e.g., populations and breeding lines versus finished, commercially valuable cultivars). OSSI therefore decided to develop model licenses for both alternatives with the intent to allow breeders to choose the option that best fits their situation. Believing that only a truly functional license would recruit support and stimulate use, OSSI instructed its legal team to draft licenses that were both "copyleft" and maximally defensible in court.

Over the past fifteen months or so, OSSI's legal team has struggled to draft effective, workable licenses of both types. Unfortunately, this effort has not been successful. In December, with third party legal advice, the OSSI steering committee concluded that it does not appear possible to develop an effective open source license for plant germplasm. A number of factors operate to prevent realization of this objective:

- Unlike software code which automatically receives copyright protection when it is written, creation of novel genetic sequences via breeding does not confer a corresponding property right. Lack of an unambiguous property right analogous to copyright greatly increases the enforcement burden.

- A license is a private contract which, by law, prospective licensees must have an opportunity to read it its entirety. That means that the complete language of the license would have to appear on every package or container of seed sold or exchanged. If licensed material is received or acquired without knowledge of the license, the license cannot be enforced in relation to that recipient.
- A license that is robustly defensible must be written in complicated and opaque legal terminology, and runs to considerable length. Such a license will not fit on a seed packet, nor will it be understandable to anyone but an attorney.
- The probability that such a license will be transmitted for more than a few iterations by anyone is very low. This failure to virally propagate would negate the key and most powerful feature of the open source license approach.
- Even if a short-form license could be developed, OSSI's seed company members felt that such an approach would repel rather than attract customers and is thus not a commercially viable strategy.

Compounding these technical obstacles was a sense among OSSI members that implementing a mandatory, legally binding, lengthy, confusing, unwieldy, restrictive license would bring us perilously close in style and substance to the practices characteristic of the Gene Giants.

- The proposed royalty-bearing license is very close to the forms of IPR that have proven so problematic. Indeed, it might be regarded as "PVPA-plus" inasmuch as its provisions are almost isomorphic with that federal law (the key – and critical – difference is that OSSI's draft license contains a copyleft clause that virally impedes patenting of any derivative lines).
- Also in regard to the proposed royalty-bearing license, the rights to "save" and replant" seed are to be unambiguously respected but OSSI has not come to a clear determination about how to treat sale of licensed seed by farmers.

Given these challenges, the OSSI steering committee has agreed that OSSI should reassess its objectives. While the future direction of OSSI is yet to be determined, discussion will pivot on a variety of possibilities, some of the most prominent of which are:

- Promote the release of open source germplasm through a simple, short, affirmatively phrased statement expressing a commitment to allowing unrestricted use of the seed and its derivative progeny lines.
- Focus attention on advocacy and education, as well as the issues of seed industry concentration, the excesses of corporate patenting practices (especially claims on plant traits), and public agency cooperation with corporate IPR compliance activities.
- Terminate of efforts to develop a royalty-bearing license and the legally complex defensible "free seed" license.
- Establish closer contact and cooperation with open source and seed advocacy initiatives internationally.
- Enhance and strengthen participatory plant breeding projects.

The authors look forward to discussing these issues at the Organic Seed Growers Conference.