Commentary on plant variety regulation in the United States of America

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The system for plant variety regulation in the United States is significantly different than in other countries and regions, especially when compared to its high volume trading partner, the European Union (EU). Unlike in the EU, there is no mandatory registration for varieties as a prerequisite for commercialization in the United States. Also unlike in the EU, there are no explicit requirements that varieties must be ‘distinct, uniform and stable’; or that they must explicitly embody improved values for cultivation and use before they can be marketed. However, there are U.S. legal standards for representing a plant as a variety that are comparable to the classic ‘distinct, uniform and stable’ criterion and that clearly infer improvements. Specifically, the Federal Seed Act (Sec. 101 (12)) specifies that ‘The term “variety” means a subdivision of a kind which is characterized by growth, plant, fruit, seed or other characters by which it can be differentiated from other sorts of the same kind.’ Overall, a strong commercial ethos of facilitating both market access for new agricultural products and buyer choice accounts for this choice of introducing varieties without registration in the United States.

The Federal Seed Act is the law in the United States that most significantly bears on varieties, and it focuses on the honest representation and labelling of agricultural seeds for commerce. While the Federal Seed Act comprehensively applies to plant seed varieties, it does not direct or mandate the registering of varieties. The US Department of Agriculture’s Seed Regulatory and Testing Division, which administers the Federal Seed Act, maintains a varieties names list database, the Variety Name Database (www.ams.usda.gov/services/seed-testing/variety-name-list), which is a voluntary listing that helps variety developers give notice of their name selection and avoid choosing a duplicate name.

Other laws, norms and professional associations have great bearing on how varieties are developed, introduced and publicized in the United States. In terms of development in the United States, it is not the Federal Seed Act but, rather, the active application of intellectual property protections – such as plant patents, utility patents and Plant Variety Protection Act (PVPA) certificates – to agricultural innovations that currently has the greatest influence on the breeding and distribution of new agricultural varieties. This vigorous intellectual
property activity is quite different than varieties registration. However, those varieties given a PVPA certificate do have to be registered in the Variety Name Database, if those varieties are vegetable and agriculture species, although varieties such as potatoes, trees and flowers are not required to be registered in the list. With the absence of a mandatory varieties registration system, breeders in the United States are able to seek, and significantly utilize, the nongovernmental, voluntary registering of varieties, particularly with the Journal of Plant Registrations, to publish their innovations and learn about the work of other breeders.

**Federal Seed Act**

The Federal Seed Act is best characterized as what is commonly referred to as a ‘truth in labelling’ law. The Federal Seed Act specifies its purpose: "(T)o regulate interstate and foreign commerce in seeds; to require labeling and to prevent misrepresentation of seeds in interstate commerce; to require certain standards with respect to certain imported seeds; and for other purposes." First approved in 1939 and revised in each successive decade in the twentieth century, the Federal Seed Act highlights its direct application to varieties by authoritatively defining a variety as ‘a subdivision of a kind of which is characterized by growth, plant, fruit, seed or other characters by which it can be differentiated from other sorts of the same kind, for example, Marquis wheat, Flat Dutch Cabbage, Manchu soybeans, Oxheart carrot, and so forth.” The PVPA offers slightly more specification as to its definition for varieties, but this focus applies to the PVPA’s focus on awarding intellectual property protections for breeders’ varieties work.

The Federal Seed Act is quite clear about its mandating labels for commerce in varieties. The act states:

> It shall be unlawful for any person to transport or deliver for transportation in interstate commerce . . . [a]ny agricultural seeds or any mixture of agricultural seeds for seeding purposes, unless each container bears a label giving the following information in accordance with rules and regulations prescribed under section 402 of this Act.

Immediately following this foundational principle for labelling, the Federal Seed Act states that the labels must have ‘(1) The name of the kind or kind and variety for each agricultural seed component present in excess of 5 per centum of the whole and the percentage by weight of each.’ Other requirements follow, and the implementing regulations of the Federal Seed Act reiterate and further explain the act’s labelling requirements, including:

- percentage by weight of seed;
- percentage by weight of weed or other crop seed or inert matter;
- kinds and rate of occurrence of noxious weeds seeds, specified to not exceed regulatory allowance and other ingredients and characterizing requirements.
In short, the Federal Seed Act facilitates commerce by securing for buyers and sellers alike a context of honest representation. The United States’ individual states are required to follow the Federal Seed Act and can have supplemental requirements for varieties. In the US commerce-oriented agricultural system, by mandating proper identification and enforcing against misrepresentation, the Federal Seed Act thereby promotes market dynamics and informed consumer choice for new varieties.

The US Department of Agriculture’s Seed Regulatory and Testing Division enforces the Federal Seed Act, which includes investigating charges of misrepresentation and scientific testing for seed and instituting penalties and corrective measures. Moreover, the Seed Regulatory and Testing Division maintains the Variety Name Database, which facilitates variety-name seekers under the Federal Seed Act to avoid choosing a duplicate name and also to make public their claim to a variety name. No Federal Seed Act provision or regulation was responsible for the establishment of the varieties names list database. It is administratively maintained by the Seed Regulatory and Testing Division to facilitate its work with the Federal Seed Act. Listing a variety in this database under the Federal Seed Act is voluntary, although varieties under PVPA must be entered into this database.

A few of the stipulations that control variety naming under both the Federal Seed Act and its database include:

- a variety can only have one name;
- the same name cannot be given to more than one variety of the same kind or a closely related kind;
- closely related kinds that are known to intercross, such as wheat and triticale, cannot have varieties with the same name;
- a variety cannot be misleading such as a name that is similar to an existing name but differs only in spelling or punctuation.¹²

It appears that with respect to the Federal Seed Act individual farmers generally have not entered a variety name into the database. Importantly, the naming guidelines for varieties is not the same as the varieties registration system – numerous varieties are not entered into the database. The database, like the Federal Seed Act, primarily supports the American system of facilitating market entry for honestly represented varieties and agricultural products.

**Voluntary registration**

The absence of a system for variety registration in the United States does create some challenges for variety breeders that must somehow be met. For example, breeders in government and universities often have publishing pressures or requirements as part of their careers. Some mode of recognition that is identical
or similar to registration is necessary for documenting the breeding work that they describe in their publications.

The American Society for Horticultural Science and the Crop Science Society of America offer two voluntary registration/listing variety systems in the United States, neither of which is referred to in US law. The American Society for Horticultural Science has published in the past voluntary lists of varieties from time to time in its journal HortScience, and these lists pertain to the different editorial focus of the publication. For example, in the May 2010 issue, HortScience published ‘List 45: Register of New Fruit and Nut Cultivars’, and in the April 2014 issue, HortScience published ‘List 47: Register of New Fruit and Nut Cultivars’.

The Crop Science Society of America’s Journal of Plant Registrations is the central agronomy-focused volunteer variety register in the United States. The Journal of Plant Registrations succeeded the Crop Science Society’s central publication, Crop Science, in registering varieties. The Journal of Plant Registrations states that its goal is ‘publish[ing] cultivar, germplasm, parental line, genetic stock, and mapping population registration manuscripts, keeping breeders informed about new advances in the genetic diversity of crops’.13 In order to register with the Journal of Plant Registrations, the breeder must deposit a variety’s germplasm with the National Plant Germplasm System, which is administered by the US Department of Agriculture, if that variety is a sexually reproduced crop. Nonsexually reproduced crops (e.g. clones and varieties such as sugarcane varieties) do not need to be deposited. As of 2012, the National Plant Germplasm System maintains a collection of almost 550,000 accessions (germplasm samples) of thousands of plant species. The National Plant Germplasm System also distributes species and germplasm, including patented or protected species, once their intellectual property deadline has expired.

Registering with the Journal of Plant Registrations does not require the meeting of the standards of distinction, uniformity and stability (DUS criteria), which is necessary in Europe. However, registration in the Journal of Plant Registrations is connected with manuscript submissions for publication, and these manuscripts are vetted to reviewers in the profession. The review system looks seriously and scientifically at the newness and strengths of the new variety. It appears that few farmers or hobbyists have registered with the Journal of Plant Registrations, but they are welcome to do so.

Policy rationale

Variety and seed regulation policy in the United States differs from systems in places such as the EU in its fundamental rationale. For example, the EU law depends on state-empowered technocrats to decide if a new variety has better qualities or other significant trait improvements and whether it should therefore be made available for farmers to buy. The US system, on the other hand,
is structured to let the market decide what it wants. A variety with no clear
superior quality or value can be brought to market in the United States. The
lack of registration requirements for varieties reflects a different US approach to
the government’s interaction with the agricultural sector than in other coun-
tries – with a central operating principle of minimum noninterference at the
marketing level. Thus, the American style of entrepreneurship and trial, error
and choice at the point of marketing and distribution – instead of preintroduc-
tion approval – prevails in the large US agriculture sector.

Of course, this different approach to regulation does not signify that variety
production in the United States is not significant or that the agriculture sector
does not strive for quality improvements as one of its core norms. For exam-
ple, one unofficial estimate of breeding efforts in 2013 estimates total breed-
ing expenditures in the United States at approximately $2.5 billion and this is
comprised of private, public and collaborative breeding efforts. In fact, in the
United States, extensive and rigorous variety examinations are occurring in the
university research centres, and these centres are financially supported and care-
fully followed by farmers and various agricultural corporations. Moreover, the
government, especially the US Department of Agriculture, plays a huge role in
the research and development of varieties, with a sophisticated laboratory and
research and testing apparatus integrated within government branches and in
collaboration with university and other research centres. In the United States,
these investments correlate with a strong commercial rationale for honestly
represented but minimally regulated new varieties.

Notes

1 Federal Seed Act, 9 August 1939, 7 U.S.C §§ 1551–1611, online: <www.ams.usda.gov/
2 Ibid.
3 To this author’s query, the USDA informally and unofficially offers an approximate
cumulative estimate as of 2015 that total utility patents for cultivars has risen to 8,207
and plant variety protection certificates to 10,808. Plant Variety Protection Act, 1970,
4 Federal Seed Act, supra note 1 at introductory paragraph.
5 Ibid. at s.101(12).
6 The PVPA defines variety as

a plant grouping within a single botanical taxon of the lowest known rank, that, with-
out regard to whether the conditions for plant variety protection are fully met, can
be defined by the expression of the characteristics resulting from a given genotype
or combination of genotypes, distinguished from any other plant grouping by the
expression of at least one characteristic and considered as a unit with regard to the
suitability of the plant grouping for being propagated unchanged. A variety may be
represented by seed, transplants, plants, tubers, tissue culture plantlets, and other matter.
Plant Variety Protection Act Regulation, Section 41 on Definitions and Rules
of Construction, online: <www.ams.usda.gov/sites/default/files/media/Plant%20
7 Federal Seed Act, supra note 1, at s. 201 and 201(a).
8 Ibid., s. 201(a) 6.
9 Ibid., s. 201(a) 4.
10 Ibid., s. 201(a) (6)(7).
11 Ibid., s. 201(a) 10.