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ORGANIC SEEDS OF THE FUTURE: SIMPLE MATERIAL?

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Abstract: The day where seeds were considered as “material” in legal text was a decisive moment. Using the word “material” (translated by *matériel* in French) to define a seed sounds as an oxymoron! It's surprising that the organic sector tolerates the word *material* in its legislation to name living beings! Semantic drifts and technical drifts are close. Which type of organic seeds do we prepare for the future? Patented seeds, edited seeds, certified seeds, farm seeds, peasant seeds, participatory seeds? It's time to decide! A simple word may change the way of envisioning plant breeding and it is finally the relationship to the living that is questioned.

Introduction: Seed, as the first link in the food chain, is at the heart of strategic issues and particularly subject to numerous regulations. France, inspired by the Czechoslovak law^[1] was one of the first countries to establish by decree, in 1922, a register of selected plants and to set up a seed control committee. Since then, the number of French laws, decrees and regulations concerning seeds increase exponentially (fig. 1).

Material and methods: Semantic shift from “seed” to “material”

The day where seeds or plants were considered as “material” in legal text was a decisive moment.

This day was the 1st Dec.1961, when UPOV^[0] was adopted. In this first convention, the term *material* is used 11 times: art.5 “The effect of the right granted to the breeder [...] is that his prior authorizing shall be required for the production, for purposes of commercial marketing, of the reproductive or vegetative propagating *material*, as such, of the new variety, and for the offering for sale or marketing of such *material*. Vegetative propagating *material* shall be deemed to include whole plants. The breeder's right shall extend to ornamental plants [...] when they are used commercially as propagating *material* in the production [...]”; art.7 “[...] the competent authorities of each country may require the breeder [...] to furnish all the necessary information, documents, propagating *material* or seeds”; art.8: “concerning the production and marketing of seeds and propagating *material*”; art. 8 and 10 : “reproductive or propagating *material*”, art. 12 “documents and *material* required by the laws”, art.13 “reproductive or vegetative propagating *material*”, and art.14 “certification and marketing of seeds and propagating *material*”.

In this convention, the term *material* is mainly affixed to the term “*propagating*”. In 3 articles, the word “seed” is used independently of the term “propagating material”.

In the UPOV convention revised on March 19, 1991, the term *material* is written 27 times and affixed, in 8 cases, to the term “harvested”. Article 14 gives the definition: “harvested *material*, including entire plants and parts of plants” and Article 16 adds “**material**” means, in relation to a variety, (i) propagating material of any kind, (ii) harvested material, including entire plants and parts of plants, and (iii) any product made directly from the harvested material. “

The word “seed” is no more present in this revised convention! It was therefore included in the term “material”.

In the French legal texts, the word *material* appears for the first time in the decree n° 71-828 related to the grapevines planting and production, circulation and distribution of vegetative propagation *material*. In this text, are considered as propagation *material*: “Rooted vine plants, graft-welded, potted plants, cardboard plants, shoots and cuttings.” This text derived from those of the council directive (68/193/EEC) in which the word *material* is used 113 times!

Today, nobody pays attention to the use of this term. It has completely entered the current vocabulary to name a seed, a vegetal or one of its part and is used by all the actors of the agricultural sector. Even in the scientific literature, the description of the plant species and varieties is ranked in the “material and methods” section.

But this is not a meaningless or an innocuous term!

Results: What terms were used in the past?

Lists of precise words were used, such as : “*plants, seeds, bulbs, tubers, cuttings or grafts*”^[2], “*bulbs, onions, flower cuttings, seeds, cuttings, grafts, plants, scions and fruit trees*”^[3]

What about the organic regulation?

Throughout the European Union, regulation (EC) No 834/2007 specified all the rules to be followed concerning the production, processing, distribution, import, control and labeling of organic products. In this text, 35 occurrences of the word *material* are found, essentially ‘feed *material*’ and “vegetative propagating *material*’.

This regulation has been repealed by the regulation (EU) 2018/848 on organic production and labeling of organic products. In this new one, there are 138 occurrences of the word *material*. It is often present as “plant reproductive *material*’ (47 times), “feed *material*’ (29) but also newly as “organic heterogeneous *material*’ (17), “plant genetic *material*’ (2) or “parental *material*’ (2).

According to the article 3-18 : “organic heterogeneous *material* means a plant grouping within a single botanical taxon of the lowest known rank which: (a) presents common phenotypic characteristics; (b) is characterized by a high level of genetic and phenotypic, diversity between individual reproductive units, so that plant grouping is represented by the *material* as a whole, and not by a small number of units; (c) is not a variety within the meaning of Article 5 [...]; (d) is not a mixture of varieties; and (e) has been produced in accordance with this Regulation”.

This regulation 2018/848 will come into force in January 2021.

What does this semantic drift mean?

Used as an adjective, the word *material* can be opposed to the word *spiritual*, therefore, everything that is not of the spiritual sphere is called material. Of which act.

But the word *material* (translated by “matériel” in french) is most commonly defined by “the set of objects, instruments, equipment and tools used in a service; e.g.: used *material*, acquisition, maintenance or lack of *material*, bring your *material*, renew the *material*, defective or advanced *material*, purchase, repair, renewal, endowment, investment in material, distribution, pile up”^[4]

Therefore, to no longer talk about plants, seeds, cuttings, roots, etc.. but to talk about *materials* equals to deny their belonging to the general classification of living beings! The same is true for animal seeds for which the expression "animal reproductive *material*" is used in various European regulatory texts^[5]

At the beginning the word *material* did not include seeds since the regulatory texts maintained the 2 terms, today this word *material* covers seeds and all organs used for reproduction (tubers, cuttings, bulbs, rhizomes...), all the products of the harvest (grains, tubers, ...), and also any vegetative part of a plant as well as any product manufactured directly from the product of the harvest (art16, UPOV).

The word material has become very encompassing and therefore polysemic. It has the usefulness of concision to limit the number of pages of legislative texts! But it has the major disadvantage of not being a harmless word. This materialization of life necessarily leads to deviations, unless it is the opposite... Semantic drifts and technician drifts are close.

To consider seeds as material means to allow oneself to manipulate them, to degrade them, to repair them, to edit them, to market them, to patent them.

Even IFOAM introduces the word *material* in its position paper on seeds! ("The Use of Organic Seed and Plant Propagation *Material* in Organic Agriculture, 2011"). However, in accordance with the 4 principles of organic agriculture: Health, Ecology, Fairness and Care, it was agreed that breeding methods must respect the "life integrity, planttypic integrity, phenotypic integrity and genotypic integrity. [...] By introducing the concept of integrity of plants, the organic sector challenges the plant breeders to develop additional and new approaches for organic plant breeding and propagation"^[6]. It should challenge also lawmakers to find an alternative word!

Discussion: What will the organic seeds of the future look like if we continue to consider them as simple material?

Patented seeds, edited seeds, certified seeds, farm seeds, peasant seeds, participatory seeds?

It is finally the relationship to the living that is questioned. Between an ecocentric vision that prohibits any action on non-human life, and an anthropocentric vision that justifies the exploitation of any resource for the well-being of Man, an alternative path must be considered.

References: [0] International convention for the protection of new varieties of plants

[1] Law 17 Mar. 1921 on the recognition of the origin of types, seeds and plants and the exam. of hortic. subjects

[2] Art 5, French decree 5 Dec. 1922 establishing a register of selected plants and a seed control committee, and law 11 Oct. 1941 on the organiz. of the market semences, graines et plants

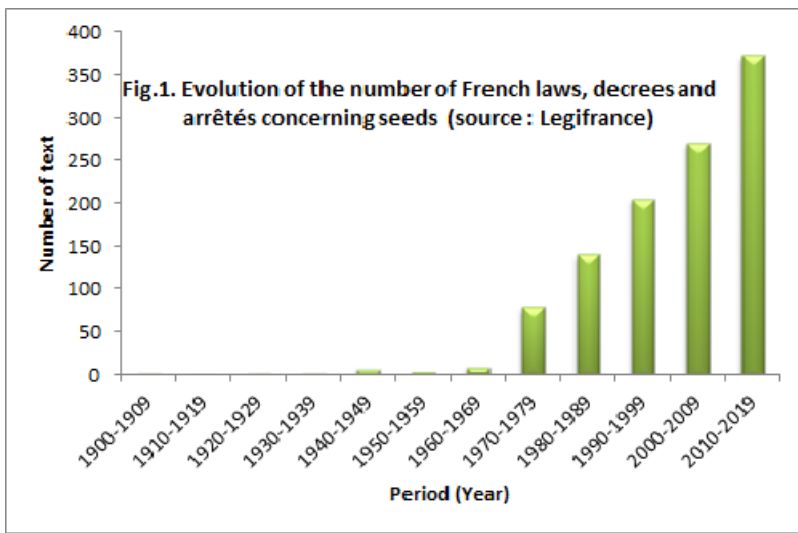
[3] arr. 7 sept 1952 et arr. 28 juil. 1954 : commerce boutures, greffons, plants, scions et arbres fruitiers, 7 jan. 1962: commer. graines, greffons, boutures ou plants d'essence forestière.

[4] *CNRTL, 2019* <https://www.cnrtl.fr/portail/>

[5] directive 98/44/EC -6 Jul. 1998 on the legal protection of biotechno. inventions

[6] Lammerts van Bueren, E. (2002) Organic plant breeding and propagation. Thesis, Wageningen Univ, Neth./ LBI

Image:



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