

Materials for the Exercise on ITA-Vines

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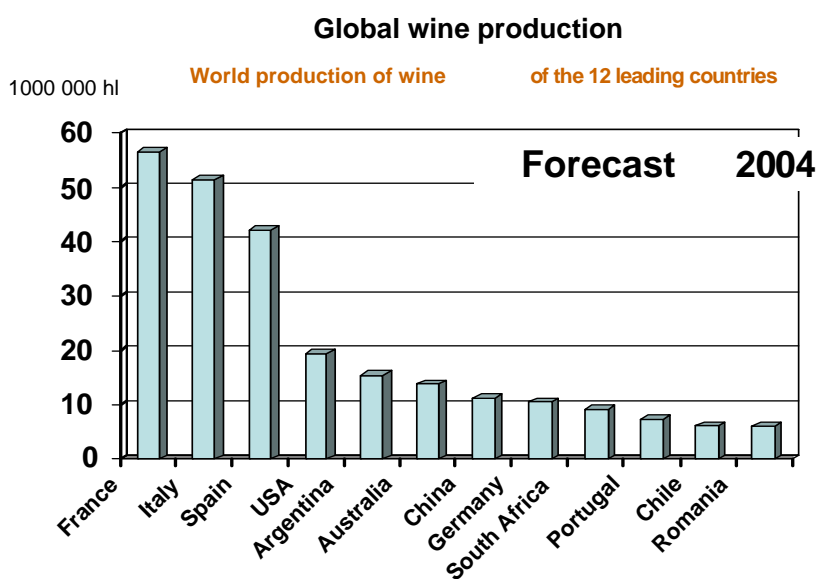
The Vine and Wine Universe in the current French Context

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The Vine and Wine Universe in the current French Context

1. Relevance of Vine and Wine in France (see also http://en.wikipedia.org/wiki/French_wine)

The wine sector is nowadays a pillar of French life providing 75000 jobs. France account for around one fifth of world wine production but has been recently hit hard by competition from "New World" rivals such as Australia and Chile (see some other statistics in **Annexe-M 1** and updated information in <http://www.oiv.int/uk/accueil/index.php>):



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Source: Presentation for the 3rd General Assembly of the International Organisation of Vine and Wine in http://news.reseau-concept.net/images/oiv/client/DIAPORAMA_STATISTIQUE_Paris%202005_V2_ENG.ppt

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The social cartography made for iTA-Vines (see **Annexe-E 2***) revealed, among others, the following relevant aspects:

The wine profession

- Prior to the Vine cultivation, the plant reproduction is an important activity. The significance of the role of garden shops (nursery pepinieristes) in the creation and selection of new varieties (thus in genetic improvement) should be explored
- Viticulture mobilises many actors, directly (owners, farmers, workers) and indirectly (machines builders and sellers, phytosanitary firms, public administration and other regulators, technical institutes, researchers)
- The production of wine
- The conditioning and conservation of wine
- The wine qualification, in particular the label AOC (Appellation d'Origine Contrôlée) (see Annexe-M 2 and 3). The inscription in this category is supposed to be associated with a quest for quality (as distinct from a quest for productivity). Important differences correspond also to the different wine regions.
- Commercialisation and consumption of wine

The main institutions

- International Organisations, like OIV <http://www.oiv.int/uk/accueil/index.php>
- National Organisations, like the INAO, the Institut National des Appellations d'Origine, which is in charge of the AOC regulation: see Annexes-M 2 and 3 and <http://www.inao.gouv.fr/public/home.php>. For other wines, see the website of ONIVINS (in French): <http://www.onivins.fr/>

The principal stakes

- The wine world knows at the present an economical crisis. The limitation of wine production (quantitatively) is one of the important issues at stake and is perceived differently by AOC or not-AOC producers.
- International competitiveness is nowadays very hard. Transgenic research is often linked to this and thereby opposes the Old (Europe) and the New World of Wine (the new comers to wine production like the USA, Australia, Chilli, or China). A wide concern is that France, country of wine “for excellence”, risks of being over passed by this new world.
- The question of vine diseases introduces frequently an opposition between the use of chemical products (widely used and very contaminant of land and phreatic water) versus transgenics. Others will range both in the category of dangerous methods, as opposed to a biological or integral struggle (it relates thus to the whole environmental debate, in fact).
- The “terroir” territory is a dimension to take also into account, since omnipresent in most discourses (see for instance Annexe-M 3). It is defined as “a system in which there are complex interactions between a set of human factors (techniques, collective usage, etc.), agricultural production and a physical environment. The terroir is valorised by a product to which it confers an original, typical nature” (Annexe-M 3, p. 3).

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2. Main actors

Besides the main institutions pointed out before (for a larger list see **Annexe-E 1*** and **Annexe-M 4***), there are other important actors that deserve consideration. Some are mentioned in **Annexe-M 9**, in relation with the GM Plants controversy in France. About GMOs issues in general, you can profitably consult as well the Governmental Institutions' websites like those of the EU <http://gmoinfo.jrc.it/> and its French equivalent <http://www.ogm.gouv.fr/> (and the related links in there).

The following websites present also relevant actors in the French Vine and Wine universe, in particular as far as the GM Vines are concerned:

- <http://www.confederationpaysanne.fr/> is the website of the trade union *Confédération Paysanne*, leaded by José Bové and promoting alternative models of agriculture. See also the **Annexe-M 6*** (in French) for their vision of Viticulture (produced in 2006).
- http://www.infogm.org/mot.php3?id_mot=295 is the website of an organisation of Citizen watch on GMOs called Inf'OGM, created in 1999. You can find a presentation in English in **Annexe-M 7** (which relates other organisations). In 2003 they will prepare an abridged English version of a full report presenting their position on GMOs and arguing for a public debate (a citizens conference) that you can consult in **Annexe-M 8**.
- <http://tvbtvm.online.fr/> is the (old) website of "*Terre et Vin de Bourgogne*", at the origin of the federation of wine growers "*Terre et Vin du Monde*", well-known producers of wine with a leaning towards organic or biodynamic systems and virulently against the use of GMOs in wine production. They were constituted in the Summer 2000 by launching "The Beaune Appeal" (see an interview to its president in **Annexe-M 5**):

The Beaune Appeal, Summer 2000

(Abridged text. The whole document in the website of « Terre et Vin de Bourgogne »: <http://tvbtvm.online.fr/>)

Summary

We are independent producers of Burgundian wine (vine-growers and negociants), concerned by the prospect of the introduction of GMOs (plants and micro-organisms) within our profession.

Following meetings with specialists in all domains, and having taken stock of current research, we have noted that many questions remain unanswered: a decrease in the genetic diversity of our grape varieties, the risk of loss of typicity in our wines, the risks of environmental dissemination, and other unforeseeable and irreversible consequences.

(...) we request a minimum 10-year moratorium on any GMO vine and wine marketing, as well as a reorientation and total transparency concerning research and approval procedures.

THE WINES OF BURGUNDY AND GMOs

(...)

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Who we are

We are independent producers of Burgundian wine (vine-growers and negociants).

We do not speak for other wine regions or for agriculture in general.

We are in no way transgenesis specialists, nor do we have any competence with regard to general public health problems or those relating to the environment in the broader sense.

On the other hand, we share the same objectives :

- To preserve the high quality of our wines while respecting their typicity and the authenticity of our terroirs.
- To respect our environment and its biological diversity.
- To ensure our children's future and that of our region.

We wish to benefit from both traditional wisdom and the continual progress of science in order to pursue these objectives.

The question we are asking ourselves is : Are GMOs a source of progress for the production of Burgundy's appellation d'origine contrôlée (AOC) wines?

Since July 1999, we have met with the most highly qualified people in this field, regardless of their horizons and convictions.

(...) These meetings have reinforced our approach: It is of the utmost importance that the future of our profession does not develop under the sole influence and interests of scientists, industrialists and technocrats. The past has taught us a few lessons in this connection; we must keep informed, and act.

Assessment of the meetings

Current state of research

1. No GMO vine or wine has as yet obtained marketing authorisation in Europe.
2. Studies are at a very advanced stage (...)
3. Other projects are in the process of being evaluated or developed :
4. Very limited experiments in the cultivation of transgenic vine plants in the field have been carried out in France and Germany. Research is highly advanced in the New World, particularly in Australia.

Our analysis

Research subjects that would make it possible for us to reduce chemical treatments in the vineyard and the use of sulphites in the wines appear to be those most in accordance with our goals. However, many questions that have been raised have yet to be answered :

1. Diversity :

The development of GMOs might accentuate a phenomenon that appeared with the generalisation of the organisms chosen: the use of a limited number of varieties, which leads to a decrease in genetic diversity; this diversity is an integral part of our vineyards.

2. Typicity :

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The risks of a loss of typicity in our wines are high with the use of GMO grape varieties and yeasts.

3. Dissemination :

GMO yeasts and bacteria run the risk of an uncontrollable spread throughout the environment, with a resulting modification in the indigenous flora. This risk would appear to be lower with GMO grape varieties and rootstocks.

4. Irreversibility :

The use of GMOs could be a decision with heavy consequences, since we might not be able to retrace our steps.

5. Unexpected effects :

It is entirely possible - for example - that by increasing the resistance of a vine to one illness via transgenesis, we might decrease its defence capacity against another. In addition, we do not know the exact place where the gene will be introduced into the plant, and the quantitative and qualitative modifications that might follow (colour, taste, texture, etc.).

As a result

Given the constraint placed on typicity, we think it is dangerous to use GMO micro-organisms in our winemaking. No new development must be undertaken as long as we cannot ensure their non-dissemination.

As far as grape varieties and rootstocks are concerned, we are aware of the progress necessary with regard to certain current cultivation methods in order to ensure perfect environmental preservation. The GMO route must therefore be explored and assessed, but as one way forward among others.

In all cases, time and substantial precautions are essential while ensuring that, come the time, everyone can make a free and enlightened choice.

We request the following :

- * A minimum 10-year moratorium on any GMO vine and wine marketing.
- * That genetic engineering not be the only priority in state research, and that it will be followed up and supported at least as much in the other domains (vine biology, parasites, micro-organisms, biological and biodynamic cultivation, and any other alternative approach).
- * That private and state research be totally transparent.
- * Better information concerning approval procedures for oenological products and plant material.

With this aim in mind :

- * We have decided to set up a surveillance and information committee in Burgundy so as to share and spread information on our work, and to act.
- * We hope that the other French wine regions will take steps similar to our own, so that together we can control and direct our viticultural future.

We have noted INAO's decision to forbid any genetically modified grape varieties and rootstocks for AOC vines and wines. At the same time, we regret that this decisive position has not been adopted with regard to the use of GMO micro-organisms.

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We are, all of us, in favour of progress. However, GMOs could represent a huge danger for a viticultural regime where the expression of terroir must have priority over technology.

Let us ensure that no one decides the future of our profession for us.

- And finally, INRA, the commissioner of iTA-Vines experience, a true gateway through+ this Vine and Wine universe (see <http://www.international.inra.fr/>).

INRA and the controversy on GMOs

INRA, the French National Research Institute for Agronomic Research, was created in 1946. It has 8500 employees (of which 3000 scientists) and 1500 PhD Students. It performs strategic basic research for agriculture, environment and food. As an institution, INRA has interacted since its creation with organized bodies of “professionals” in the agricultural sector (such as industry federations and farmers’ trade unions). Until recently, this relationship was relatively uncomplicated. The role of INRA in agricultural “progress” was mostly uncontroversial: INRA was widely perceived as a public sector institution working, by definition, for the “public good”. In recent years, as the potential negative environmental and health impacts of evolutions in agricultural systems have become debated, the positive public image of INRA has been challenged, and the relationship with the professionals has become more complex. This situation has been exacerbated by the national controversy about the use of genetically modified organisms (GMOs) in agriculture and food and the conduct of field trials of GM crops; INRA was one of the leading actors in research utilizing or creating GMOs for the agricultural sector in France and abroad.

In 1999, a field test conducted by INRA was destroyed by activists protesting against GMOs for the first time. This can be seen as an important turning point for the institute. The way in which INRA collaborates with private sector bodies was criticized, and the assumption that the institute necessarily works to promote the “public good” was challenged. Thus, the debate on GMOs, is intricately linked with the controversy about its research orientations and the way in which it fails to interact with ordinary citizens and farming organizations that promotes alternative models of agriculture, such as the Confédération Paysanne.

Within this context, in 2000, Marion Guillou was appointed as the new Director of INRA. Former Director of the Food Directorate at the Ministry of Agriculture, she had become acquainted with issues related to science and society, and interested in ways to improve citizen input in policy making, through having to deal with a series of risk-related food crises (BSE, listeria, dioxins...). She had supported the first citizen conference in France (on GMOs, in 1998), and initiated a big national debate on food policy (États Généraux de l’Alimentation). Fabrice Marty was also recruited later that year as secretary to the board of Directors, reinforcing thus this orientation. Marty had been responsible for the coordination of a series of 70 local debates on GMOs organized by consumer NGOs throughout France, under the auspices of the Secretary of State for Consumer Affairs, in 1999-2000. As far as the iTA exercise is concerned, a third member of the INRA management team must be mentioned: Guy Riba, a long standing INRA employee, who was by then Scientific Director for the Plant Science Division (PPV).

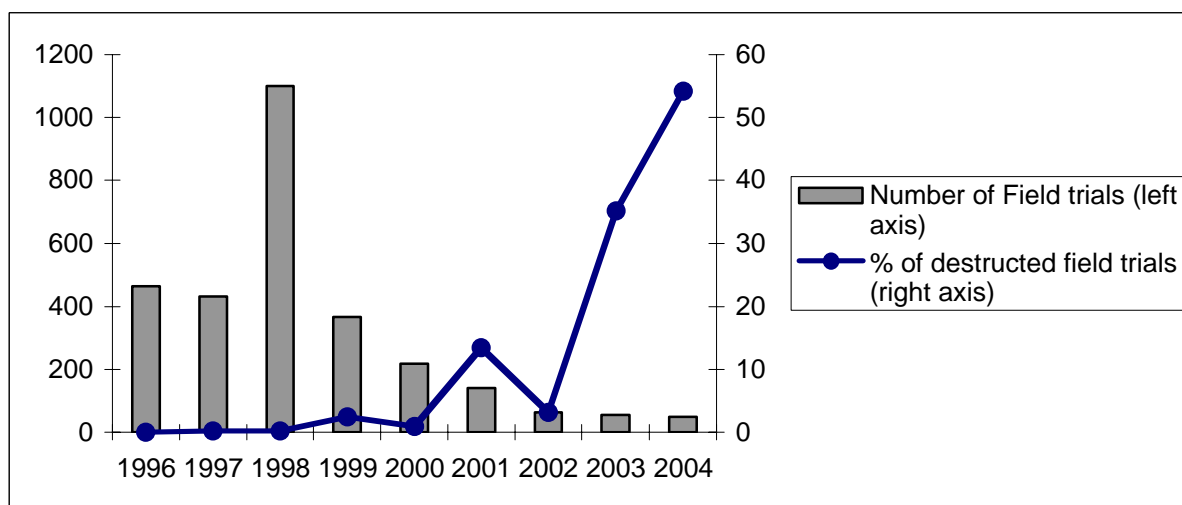
3. GM Plants research (and INRA) confronts civil disobedience

INRA, the commissioner of iTA-Vines, is fully involved in the French GMOs Controversy, namely in the changing relationships between GM plants research and society at large. These relationships will evolve towards a confrontation, and a growing movement of civil disobedience will take place. Bonneuil, Joly and Marris distinguish three phases in this evolution (see an abridged version of the text in **Annexe-M 9**):

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- mid-1980s-mid-1990s: GM plants research is accepted due to its cognitive function. Experimental releases are discriminated from commercial operations
- 1993-1996: Calls to caution appear within the research world itself. Researchers request for a moratorium and the concept of bio-watching emerges
- 1994-2004: a civil disobedience movement have room besides the demands of other forms of participation. Field-tests are destroyed and therefore push the divorce between (some) researchers and NGOs. The orientation of public research is questioned. Some participative experiences like iTA-Vines are settled (see also the contemporary Four Wisemen report of 2001, in **Annexe-M 11**).

The virulence of the movement is made evident in this table:



Source: Bonneuil, C., P.-B. Joly, and C. Marris: *Democratising experiment? The construction of GM-crop field trials as a social problem in France* (forthcoming in *Science, Technology and Human Values*)

It is in this context that the command at the origin of iTA-Vines Experience takes place.

4. The INRA's command of the iTA-Vines Experience

Since 1994, INRA participated in a joint research with CNRS and Moët & Chandon, one of the leading Champaign producers, aiming to develop a transgenic fanleaf-resistant plant. The Grapevine Fanleaf Virus is transmitted by a nematode (a worm) that attacks the vine roots. This virus turns leaves yellow and kills the flowers before they can form fruit, reducing vineyard yields. The virus is present in as many as a third of French vineyards. So far, winemakers have had to battle the virus with very toxic pesticides (namely the dichloropropene, which is forbidden in other EU countries) or by letting the soil rest for years (15-20?).

Almost all French winegrowers use separate rootstocks since the phylloxera pest nearly wiped out the European wine industry in the late 1800s. European winemakers imported resistant American rootstocks and grafted their vines onto them. The transgenic fanleaf-resistant plant developed in these researches previously mentioned was also a rootstock onto which grapevines could be grafted, an hybrid of the *Vitis vinifera* and *Vitis berlandieri* vines known as 41B. The company Moët & Chandon won approval for a field test from the Ministry of Agriculture and planted dozens of the gene-altered grapevines in 1996 at Epernay, in the heart of the zone of production. However, three years later, in December 1999 (the very same year

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that the a field test of Inra was destroyed by the first time) a French satiric newspaper, Le Canard Enchaîné published an article entitled “Des bulles transgéniques dans le champagne” (transgenic bubbles in the champaign: see **Annexe-M 10**). Moët & Chandon reacted immediately and asked for these field experiments to be pulled up. Worried about tarnishing its image, the company turned over the genetic material to INRA, who kept some copies of these GM vines in its greenhouses and cold-rooms, and hesitated about whether to pursue the field trials, or to abandon the research project because of the risk of public protest.

Early 2001, INRA’s Directorate agreed that an experiment in opening up INRA’s decision making was in order, possibly in the area of GMOs. When thinking about possible cases, the issue of GM-vines surfaced and was selected for an interactive experiment: “If we can handle GM vine, the most difficult case, we can handle everything,” was said. Therefore, the command requested advise about whether or not INRA should pursue field trials of genetically modified (GM) vines potentially resistant to the Grapevine Fanleaf Virus, the virus of “court-noué”.

List of Cited Annexes and other resources

1. Annexe-M 1: Statistics

http://en.wikipedia.org/wiki/French_wine
http://news.reseau-concept.net/images/oiv/client/DIAPORAMA_STATISTIQUE_Paris%202005_V2_ENG.ppt
<http://www.oiv.int/uk/accueil/index.php>

2. Annexe-M 2: INAO (history, AOC system)

3. Annexe-M 3: INAO (structure)

http://en.wikipedia.org/wiki/French_wine
<http://www.inao.gouv.fr/public/home.php>
<http://www.onivins.fr/>
<http://www.oiv.int/uk/accueil/index.php>

4. Annexe-M 4* (non-electronic file): Actors

5. Annexe-M 5: TVM (interview)

6. Annexe-M 6* (non-electronic file): Brochure Confédération Paysanne

7. Annexe-M 7: Inf’OGM (presentation)

8. Annexe-M 8: Inf’OGM (rapport 2003)

9. Annexe-M 9: Democratizing experiment? The construction of GM-crop field trials as a social problem in France. C. Bonneuil, P.-B. Joly and C. Marris (abridged version)

<http://gmoinfo.jrc.it/>
<http://www.ogm.gouv.fr/>
<http://www.confederationpaysanne.fr/>
http://www.infogm.org/mot.php?id_mot=295
<http://tvbvm.online.fr/>
<http://www.international.inra.fr/>

10. Annexe-M 10: Des bulles... Le Canard Enchaîné

11. Annexe-M 11: Rapport sur les OGM et les essais au champ (dit des quatre sages)

12. Annexe-E 1* (non-electronic file) : *Document de travail à l’attention du comité de pilotage (reunion du 8 octobre 2001)*

- Annexe-E 2* (non-electronic file): *Rapport d’Étape à l’attention du Comité d’Évaluation pour discussion en comité d’évaluation le 26/11/01*