

Comments from the public : GA21maize

Organisation: private company

City: Jyväskylä

Country: Finland

Type: Industry

Public: Yes

a. Assessment:

Others

It's unbelievable that you can say that maize is safe to people, if you have tested that 90 days to mouses. How can you know what that maize will do to people in 2 years or 20 years. And what about coming generation of human being, how you can be sure that it doesn' t change our DNA or other important things in our bodies. I don't want to say my children that I have chosen wrongly and your children are not healthy when they born. I will never accept GA products.

Organisation: MTT Agrifood Research Finland

City: Vihti

Country: Finland

Type: Scientific Institution

Public: Yes

a. Assessment:

b. Food Safety Assessment:

Toxicology

The opinion of the Scientific Panel on Genetically Modified Organisms (GMO Panel)of the European Food Safety Authority (EFSA) on herbicide-tolerant genetically modified maize GA21 (Unique Identifier MON-ØØØ21-9) developed to provide tolerance to glyphosate by expressing a modified version of the EPSPS protein is not scientific in respect of Environmental risk assessment and monitoring plan: 1. Issues raised by the Member States are not taken in account at all

2. Toxicological assessment of the whole GM food/feed shows significant response. Instead to continue the rat experiments over longer periods and several generations, the statistical differences are declared as toxicologically not relevant. There is no proof, that data from Syngenta Seeds S.A.S. are not manipulated.

Allergenicity

The GMO Panel is not able to quantify the risk of allergenicity and considers it unlikely that the mEPSPS protein in maize GA21 is an allergen.

3. Environmental risk assessment

1. The Scientific Panel did never take into consideration the impact of genetic engineering onto the aerobic methane production of crops, by a hitherto unrecognized process: Frank Keppler, John T. G. Hamilton, Marc Braßl, & Thomas Röckmann 2006: Methane emissions from terrestrial plants under aerobic conditions *Nature* Vol 439|12 January 2006|doi:10.1038/nature04420

2. The assessment of the Scientific Panel on Genetically Modified Organisms on applications (references EFSA-GMO-UK-2005-19 and EFSA-GMO-RX-GA21) does not take into consideration the risks caused by the environmental exchange of volatile (Amino) acids between fauna, flora and human beings: Hoffmann, U., Weller, D., Ammann, C., Jork, E. und Kesselmeier, J. (1997): Cryogenic trapping of atmospheric organic acids under laboratory and field conditions. *Atmospheric Environment* 31, 1275 - 1284 Kesselmeier, J., Bode, K., Gerlach, C. und Jork, E.M. (1998): Exchange of atmospheric formic and acetic acids with trees and crop plants under controlled chamber and purified air conditions. *Atmospheric environment* Vol 32, 10, 1765 – 1775. Kesselmeier, J. und Staudt, M. (1999): Biogenic volatile organic compounds (VOC): An overview on emission, physiology and ecology. *Journal of Atmospheric chemistry* 33, 23 – 88. Kuhn, U., Amman, C., Wolf, A., Meixner, F.X., Andreae, M.O., Kesselmeier, J. (1999): Carbonyl sulfide exchange on an ecosystem scale: soil represents a dominant sink for atmospheric COS. *Atmospheric environment* Vol 33, 995 – 1008. Meixner, F.X., Bliefernicht, M., Helas, G., Kesselmeier, J., Wyers, P.G. und Andreae, M.O. (1997): Ammonia exchange between terrestrial plants and the atmosphere controlled by plant physiology: Compensation point and CO₂-exchange. In: Slanina, S. (Hrsg.) *Biosphere-atmosphere exchange of pollutants and trace substances*. Springer Berlin. Scheller, E. (2001): Amino acids in dew – origin and seasonal variation. *Atmospheric environment* 35, 2179-2192. Scheller, Edwin; Cuendet, Catherine; Müller, Jens and Werren, Dagmar (2003) Austausch von Aminosäuren und Proteinen zwischen Pflanzen und Böden über die erdnahen Luftschichten [Exchange of amino acids and proteins between plants and soils through the air]. Paper presented at 7. Wissenschaftstagung zum ökologischen Landbau: Ökologischer Landbau der Zukunft, Wien, 24.2. -26.2.2003; Published in Freyer, Bernhard, Eds. Beiträge zur 7. Wissenschaftstagung zum ökologischen Landbau: Ökologischer Landbau der Zukunft., page pp. 9-12. Universität für Bodenkultur, Institut für ökologischen Landbau.

3. Environmental risk assessment does not quantify the probability of the different risks.

4. The regulation and risk assessment of glyphosate is within the scope of Directive 91/414/EEC concerning the placing of plant protection products on the market (EC, 1991). This means, that the board refers to 16 years old directive not including recent research results: Nach allem was zu den Umweltwirkungen von Glyphosat in den letzten Jahren in der Fachliteratur bekannt geworden ist (sie reichen von der hohen Giftigkeit für Amphibien bis hin zum deutlich erhöhtem Hautkrebsrisiko bei Landwirten, die damit häufig unbesorgt hantieren, wohl weil es eine geringe akute Toxizität aufweist), gehört der Einsatz dieses und

ähnlicher Totalherbizide eigentlich verboten. Auf die überwiegend sehr nachteiligen Wirkungen auf den Naturhaushalt angesprochen meinte Dick Potts, dass von Glyphosat in vielen Jahren vielleicht einmal so gesprochen wird wie heute von DDT, bei dem habe es ja auch sehr lange gedauert hat, bis es schließlich in der Landwirtschaft verboten wurde. Der Grat zwischen nützlicher und schädlicher Wirkung ist auch bei der Anwendung der Gentechnik in der Landwirtschaft mitunter schmal. Das zeigt der Fall bestimmter transgener, gegen Unkrautvernichtungsmittel resistenter Nutzpflanzen der ersten Generation, die vor Augen führen, dass auch die Grüne Gentechnik sorgsam weiterentwickelt und immer wieder auch auf nachteilige Effekte hin geprüft werden will. In diesem Fall betrifft das die Wirkung auf Spurenelemente. Glyphosat ist ein organisches Molekül, das von den Chemikern als ein Komplexbildner entwickelt worden war, der Ionen einfängt und festhält. Erst später entdeckte man dessen herbizide Wirkung, die auf der Inaktivierung eines lebensnotwendigen Pflanzenenzymen beruht. Volker Römheld von der Universität Hohenheim hat sich intensiv mit der Frage beschäftigt, wie das Glyphosat Mangelzustände bei Pflanzen hervorruft. Das auf Pflanzen aufgesprühte Glyphosat wandert von den Blättern bis in die Wurzeln. Der Wissenschaftler hat herausgefunden, dass Glyphosat, das man auf junge Pflanzen sprüht, den Transport von Spurenelementen von den Wurzeln hinauf in die Pflanzensprosse fast völlig unterbindet. Die Wurzeln vermögen den schwer löslichen Glyphosat-Metall-Komplexen die Spurenelemente offensichtlich nicht zu entziehen. Bei transgenem Mais und Sojabohnen hat Don Huber von der > Purdue University in West Lafayette/Indiana eine Verringerung der Widerstandsfähigkeit gegenüber dem Herbizid um bis zu fünfzig Prozent beobachtet. Um diese Nachteile zu umgehen, empfehlen amerikanische Landwirtschaftsmanager inzwischen, das Herbizid und die Spurenelemente getrennt zu spritzen, am besten im Abstand von ein bis zwei Wochen. F.A.Z., 18.07.2007.

Translation:

In view of everything about the environmental effects of glyphosate that has been made known in the literature over the past few years (ranging from severe toxicity for amphibians to a marked increase in the risk of skin cancer in farmers, who frequently handle it without due care because of its low acute toxicity), the use of this and similar total herbicides should really be banned. When asked about the largely very negative effects on natural balance, Dick Potts said that, in many years, glyphosates might well be talked about in the same way as DDT today, which was finally banned in farming only after a very long time. There is also a fine balance between the beneficial and harmful effects in the use of genetic engineering in agriculture. This is illustrated by some first-generation transgenic crops resistant to herbicides, which show that green genetic engineering also needs to be developed carefully and has to be tested repeatedly for any adverse effects. In this case, it is trace elements that are affected. Glyphosate is an organic molecule developed by chemists as a complexing agent which captures and binds ions. Only later was its herbicidal effect discovered, which stems from inactivation of a vital plant enzyme. Volker Römheld of the University of Hohenheim undertook an intensive examination of how glyphosate causes deficiencies in plants. When it is sprayed onto plants, it migrates from the leaves into the roots. The scientist found out that, in young plants, it almost entirely inhibits the transport of trace elements from the roots up into the shoots. The roots are obviously no longer capable of extracting the trace elements from the glyphosate/metal complexes, which are difficult to break down. In transgenic maize and soya beans, Don Huber from Purdue University in West Lafayette, Indiana observed a decrease in the resistance to the herbicide of up to 50%. In order to avoid these adverse effects, American farming managers now recommend spraying the herbicide and the trace elements separately, ideally at intervals of one to two weeks. F.A.Z., 18.07.2007.

4. Conclusions and recommendations

GM -tuotteita tutkitaan aivan perusteellisesti. Mutta ei niin perusteellisesti kun esim. lääkkeitä. Suuri ero verrattuna lääkkeisiin on, että

a) Kuluttajat eivät tarvitse geenimanipuloituja kulttuurikasveja (GMK). Eivät edes viljelijät, jotka haluavat vain vähentää tuotantokustannuksia, tuskin tuottaa GMK. b) Vaarallisen lääkkeen uhri voi saada korvauksia, mutta viljelijöiden ja kuluttajien GMK -riskejä ei kukaan vakuuta. c) Lääkkeet voidaan kieltää ja vetää takaisin, GMK -saastutusta ei voi peruuttaa.

Kuluttaja saa GMK koskevia turvallisuustietoja yllin kyllin. Ja niihin hän yleensä luottaa. Mutta varovaisuus viranomaisia, GMK -tutkijoita ja GMK -teollisuutta kohtaan on paikallaan hyvistä syistä:

1. Viranomaiset eivät osaa suojata kuluttajia.
2. Suomen viranomaiset puoltavat GMK:a.
3. Viranomaiset kiertävät kansainvälisiä raja-arvoja.
4. Tutkijat mieluummin riitelevät kuin tutkivat GMK:n vaaroja.
5. Tutkijat uskovat mieluummin kun tietävät turvallisuudesta.
6. Tutkijat laulavat rahoittajien lauluja.
7. GMK -teollisuus rakentaa mahtavaa oligopolia.
8. GMK -teollisuus yksityistää voitot ja sosialisoi kustannukset.
9. GMK -teollisuus tuhlaa verovaroja.

Kuluttaja ei pelkkä mitä viranomaiset ja tutkijat tietävät, hän pelkkää tutkijoiden ja GMK -teollisuuden tietämättömyyttä. Tässä esimerkkejä:

Syytä pelätä viranomaisten tietämättömyyttä: Mahdollisen katastrofin esimerkki olkoon Talidomidi, joka iski Suomessakin¹. Talidomidi-skandaali on todella Ihmisen kokoinen katastrofi. Ylen dokumentti tuo selvästi esille, kuinka vähäisestä virheestä joutuu kärsimään koko elämänsä. Yhtäkään äitiä ei saatu haastateltavaksi, ainoa, joka on vielä elossa, kieltäytyi antamasta haastattelua. Hänen sanansa kieltäytymisen yhteydessä kertovat paljon asenteista, joihin vanhemmat ja lapset ovat törmänneet. " En suostu tulemaan televisioon, olen häpeäkuollut jo niin monta kertaa..."

Pelkästään Eurooppaan on tammikuusta 2006 lähtien viety USA:sta 140 000 tonnia geenimuunnellun lajikkeen saastuttamaa riisiä. Saastutus on peräisin lajikkeesta LL601, jota kehitettiin ja testattiin vuosina 1998 - 2001. Sekä USA:n että EU:n lain mukaan lajikkeen LL601 myynti, myös vähäisenä saastutuksena on kielletty, koska virallista hyväksyntää ei ollut haettu ja vaikutusta terveyteen ei ole tutkittu. Geenitekniikan lautakunta lupasi vuosia sitten, että GMO -valvonta on turvallista. Ei oikeastaan ole väliä, uskommeko asiantuntijoiden väitettä, ettei ihmisille eikä ympäristölle aiheudu vaaraa pienistä määristä geenimuunneltua tuotetta. Huolestuttavaksi asian tekee valvonnan epäonnistuminen, koska siemenen saastumisen on täytynyt alkaa jo vuonna 2003! Kuka USA:ssa valvoo, ettei kukaan viljele hyväksymättömiä lajikkeita? Suomen viranomaiset eivät estäneet kansalaisten hyväksikäyttöä koekaniineina². Geenitekniikan lautakunnan pöytäkirjassa 28.11.2006 lukee: "Muut asiat: kohta 5.3: "Luvattoman GM -riisin maahantuonnin kiellosta on ilmestynyt komission päätös. Suomessa tulli on vastuullinen valvontaviranomainen". Lautakunnan velvollisuus "rajoittaa tai tarvittaessa kieltää muuntogeenisen organismin käytön" ja "määrää tarvittaessa uhkasakon sekä teettämisen- ja keskeyttämisen" jäi hoitamatta.

EFSA varmisti 27.6.2007, että Monsanto maissi MON863 on vaaratonta, vaikka Séralini et al.³ tulivat toukokuussa 2007 seuraavaan tulokseen: "with the present data it cannot be

concluded that GM corn MON 863 is a safe product”. Sen sijaan, että EFSA olisi tehnyt uusia eläinkokeita, se antoi Monsanto:n tiedot eri asiantuntijoille jotka tulivat siihen tulokseen, että heillä on parempi tilastollinen menetelmä kuin Séralini et al. ja siksi MON 863 vaikutukset rottien terveyteen olivat sattuma. Ei kukaan tarkistanut, ovatko Monsanto:n antamat tiedot aitoja.

Suomen viranomaiset suojaavat kansalaisia ja viljelijöitä hukkakauralta hyvin tehokkaasti. Siemenessä ei saa olla hukkakauraa, ja rajoittavasta pellostaa saa löytyä enintään kaksi hukkakaurayksilöä. Siemenen saa myydä vain, kun riskiä hukkakauran joutumisesta kylvösiementuotantoon tarkoitettuun erään ei ole. Kummallista on, että hukkakauran taloudellinen vahinkoarvo maanviljelijöille arvioidaan Suomessa korkeammaksi kuin GMK -saastutettujen siementen taloudellinen vahinko luomuviljelijöille tai terveysriskit kuluttajille. Viranomaisten velvollisuus hoitaa kansalaisten etuja riippuu ilmeisesti rahasta: EVIRA:lta, joka lain mukaan takaa siementen puhtauden hukkakauraan nähden, kuluu siementarkastukseen 15 miljoonaa euroa vuodessa. Mutta siementen GMK -vapauden takaaminen ei lainsäädännön mukaan ole EVIRA:n tehtävä - onhan se käytännössä mahdotonta.

Saksan maatalousministeriö kielsi 27.4.2007 Monsanto:n MON810 GM-maissin siementen myynti maissin terveysriskien vuoksi. Mutta päätös julkaistiin vasta kylvökauden jälkeen! Suomen geenilautakunnan päätös samassa asiassa oli (pöytäkirja 30.1.2007): Itävalta on ainoa EU-maa, jossa GMK -siemenet on virallisesti kielletty - komission tahdon vastaisesti ja menestyksellisesti: 18.12.2006 EU-komissio hävisi ratkaisevan äänestyksen toisen kerran, kun 2/3 jäsenvaltioista kieltäytyi pakottamasta Itävaltaa peruuttamaan Monsanto:n GM-maissia "Mon 810" koskevan kiellon.

MMM perustelee GMK- jalostusta mm sillä, että sen avulla mm. voidaan torjua nälänhätää kehitysmaissa. Samanaikaisesti osittain valtion omistama Fortum ostaa elintarvikkeita samoista maista biopolttoainevalostamolle.

”Suomi saamassa jatkoajan dioksiinisilakalle” otsikoi Helsingin Sanomat5, koska Suomessa saa edelleen myydä silakkaa ja lohta, joiden dioksiinipitoisuus ylittää EU:n raja-arvon. Tieteen Olympoksen tiedotuslehdessä, arvostetussa Science-lehdessä julkaistiin raportti6 jossa todettiin, että norjalainen lohi sisältää niin paljon dioksiinia, että sitä pitäisi syödä korkeintaan kolme kertaa vuodessa. Norjalainen elintarvikevirasto myöntää, että mitatut luvut pitävät paikkansa. Jopa venäläiset viranomaiset kielsivät kalan tuonnin Norjasta.

Syytä pelätä tutkijoiden tietämättömyyttä: Prof. emeritus Petter Portin kiisti 1.8.2007 Hesarissa, että tiedemiehet käyvät tiukkoja kiistoja GMO puolesta ja sitä vastaan. Väite ei pidä paikkansa, esimerkkejä: (katso myös EU-maiden äänestyskäytännön taulukko alhaalla)

EU:n Standing Committee on Agricultural Research (SCAR) Foresight Group AGRICULTURE AND ENVIRONMENT väittää: “According to Bartsch & Schuphan (2002) there is no evidence that the use of genetically modified plants would contradict sustainable agriculture and nature conservation per se. However, the effect of GMOs on the environment is a politically and scientifically much debated issue7.” Lähteessä Bartsch & Schuphan (2002) lukee: „In particular, we compared the ecological performance of rhizomania resistant genotypes under various environmental conditions with regard to parameters such as competitiveness, winter hardiness and seed production. ... Field experiments carried out between 1993 and 1999 demonstrated that transgenic beets grew better than virus-susceptible beets only when the virus was present. Marie Walls siis perustelee GMK vaarattomuutta

tulevaisuusraportissaan vanhoilla tiedoilla. Bartsch on nykyään Saksan maatalousministeriön edustaja EFSA:ssa.

Reuters ilmoitti, että "EU biotech experts failed on Friday 8.6.2007 to agree on approving two genetically modified (GMO) maize varieties, sending the applications to national ministers for further consideration, the European Commission said. The first maize hybrid, submitted for EU approval by U.S. biotech company Monsanto, is known as MON810/NK603. The second GMO maize, a hybrid known as 1507/NK603, is made jointly by Pioneer Hi-Bred International, a subsidiary of DuPont Co. and Dow AgroSciences unit Mycogen Seeds. Pioneer and Mycogen also submitted an application for a third GMO, a maize known commercially as Herculex RW and also by the code number 59122. There was no vote on Herculex RW8."

Kuopion yliopiston professori Atte von Wright väittää teoksen "Petoksen siemenet" arvostelussa⁹, että tekijä ja tekijää tukevat GM-tekniikan vastustajat uskovat itse levittämiinsä myytteihin ja ovat uskonsa uhreja. Von Wrightin julkaisuista käy ilmi, että hän uskoo GM-kasvien riskien olevan pienet¹⁰. Yleensä tiedemies tietää. Tieteellisiä todisteita uskolleen hänellä ei ole. Syytä pelätä GMK-teollisuuden tietämättömyyttä: Monsanto, Syngenta, DuPont ja Limagrain valtaavat 49 % maailman siemenkaupasta ja suurimmat kymmenen hallitsevat nyt 64% maailmanmarkkinoista (2006: 23 Milliardia US-Dollar). 1996 markkinaosuus oli 37 %, 2005 49 %. Siemenkauppateollisuus kuuluu niihin maailman oligopoleihin, joissa on vähiten osallistujia¹¹.

1997–2004 Suomen biotekniikan yritykset saivat 175 818 515 €julkista rahoitusta. Sillä rahalla he tuottivat 39 004 600 €tappiot¹². Voidaanko selvemmin todistaa, ettei kukaan tarvitse tai halua "henkilökohtaisia dieettejä geenikartan avulla"?

Mitä hyötyä MMM:lle ja viljelijöille on siitä, että Suomi on riippuvainen yllä mainituista kansainvälisistä yrityksistä, jotka laajentavat valtaansa ja rikastuvat, ja että voitot yksityistetään ja kustannukset sosialisoidaan?

Mikäli GMK -teollisuus pystyisi tekemään, mitä se on aina luvannut – täsmäjalostusta – miksei sitten jalosteta juolavehnästä designer-viljaa geenikartan avulla? Esi-isät jalostivat kuulemma seitsemän viljalajikettamme heinäkasveista – ilman tietokonetta ja laboratoriota. Ja vielä yksi kysymys, johon viranomaiset, tutkijat ja GMK -teollisuus eivät ole osanneet vastata tietämättömyytensä vuoksi: Mikä on elävän ja kuolleen olion geenin ero, kun se on kemiallisesti ja fysikaalisesti aivan sama?

Translation:

GM products are being studied quite thoroughly, though not as thoroughly as pharmaceuticals, for example. A big difference compared with pharmaceuticals is that:

a) Consumers do not need genetically modified crops. Even cultivators who just want to reduce production costs are unlikely to produce GM crops. b) The victim of a dangerous drug may receive compensation, but nobody insures the risks to cultivators and consumers associated with GM cultivated plants. c) Pharmaceuticals can be banned and recalled, but GM crop contamination cannot be reversed.

Consumers receive plenty of safety information regarding GM crops, and usually trust this information. However, there are good reasons for being wary of authorities, GM cultivation researchers and the GM crops industry:

1. The authorities are unable to protect consumers. 2. The Finnish authorities favour GM crops. 3. The authorities circumvent international recommended levels. 4. Researchers would rather argue than research the dangers of GM crops. 5. Researchers would rather believe in than know about safety. 6. Researchers play to the tune of the financiers. 7. The GM crops industry is building a massive oligopoly. 8. The GM crops industry privatises profits and nationalises expenses. 9. The GM crops industry squanders tax revenue.

Consumers are not afraid of what the authorities and researchers know – it is the researchers' and GM crops industry's ignorance consumers fear. Here are some examples:

Reasons to fear the ignorance of the authorities: Let us take as an example of a possible catastrophe, the drug thalidomide, which also hit Finland¹. The thalidomide scandal truly is a catastrophe on a human scale. The YLE documentary clearly highlights how a minor error can cause a lifetime of suffering. No mothers could be interviewed; the only one that is still alive refused to give an interview. Her words in connection with the refusal speak volumes about the attitudes met of the parents and children. "I refuse to appear on television, I have already died of shame so many times."

Since January 2006, 140 000 tonnes of rice contaminated by a genetically modified strain has been brought to Europe alone from the USA. The contamination originates from strain LL601, which was developed and tested in 1998-2001. Under both U.S. and EU legislation, the sale of the LL601 strain, even as a minor contamination, is forbidden, as no formal approval has been sought and its health effects have not been studied. The Board for Gene Technology of Finland promised years ago that GMO monitoring is safe. It doesn't really matter whether we believe the experts' claim that small amounts of genetically modified products do not pose a danger to people or the environment. What makes the issue worrying is the failure of monitoring, as the contamination of the seed must have commenced already in 2003. Who in the USA monitors that no-one is cultivating non-approved strains? The Finnish authorities have not prevented the exploitation of citizens as guinea pigs². The minutes of a meeting of the Board for Gene Technology of Finland dated 28 November 2006 read as follows: "Other matters – section 5.3: A Commission decision on the prohibition of importing GM rice has arrived. In Finland, customs will be the administrative supervisory authority." The Board's duty to "restrict or, if necessary, prohibit the use of a genetically modified organism" and "if necessary, impose a penalty payment and a compulsory order and a threat of interruption" was neglected.

On 27 June 2007, the European Food and Safety Authority (EFSA) confirmed that the Monsanto maize MON863 is safe, although Séralini et al.³ came to the following conclusion in May 2007: "with the present data it cannot be concluded that GM corn MON863 is a safe product." Instead of carrying out subsequent animal tests, the EFSA submitted the information regarding Monsanto to various experts who reached the conclusion that they have a better statistical method than Séralini et al., which is why the effects of MON863 on the rats' health were a coincidence. Nobody verified the authenticity of the information given by Monsanto.

The Finnish authorities protect citizens and cultivators from wild oat very effectively. There must not be any wild oat in the seed, and no more than two wild oat specimens may be found in any demarcated field. A quantity of seed can only be sold if there is no risk of wild oat getting in the batch intended for agricultural seed production. It is strange that, in Finland, the economic damage of wild oat is evaluated as being greater than the economic damage to organic farmers and the health risks to consumers from seeds contaminated by GM crops. The obligation of the authorities to look after the interests of citizens apparently depends on money: The Finnish Food Safety Authority (EVIRA), which by law guarantees the purity of

seeds with respect to wild oat, spends EUR 15 million on seed inspection every year. However, guaranteeing that seeds are free of GM crop contamination is not the duty of EVIRA according to legislation – it is, after all, practically impossible.

On 27 April 2007, the German Federal Ministry for Food, Agriculture and Consumer Protection banned the sale of Monsanto's MON810 GM maize due to the health risks of the maize. However, the decision was not published until after the sowing period⁴! The Board for Gene Technology of Finland came to the following conclusion on the same issue (minutes of meeting of 30 January 2007): Austria is the only EU country in which GM crop seeds are officially banned, against the will of the Commission and with success: on 18 December 2006, the European Commission lost a decisive vote for the second time when two-thirds of Member States refused to force Austria to repeal the ban of Monsanto's MON810 GM maize.

The Ministry of Agriculture and Forestry of Finland justifies GM crop growing by the fact that it can help stave off famine in developing countries. At the same time, the energy company Fortum, which is partly owned by the government, buys food from the same countries for a biofuel refinery.

"Finland about to get an extension on dioxin Baltic herring," read the headline of Helsingin Sanomat⁵, as Baltic herring and salmon whose dioxin content exceeds the EU limit can still be sold in Finland. A report⁶ was published in the magazine Science, the esteemed porte-parole of the Mt Olympus of science, finding that Norwegian salmon contains so much dioxin that it should be eaten at most three times per year. The Norwegian Food Safety Authority admits that the measured figures are correct. Even the Russian authorities banned the import of fish from Norway.

Reasons to fear the ignorance of the authorities: Petter Portin, Professor Emeritus, claimed in the Helsingin Sanomat on 1 August 2007 that scientists do not engage in heated discussions for and against GMOs. The claim is false – for example: (see also the table of EU countries' voting behaviour below)

The EU Standing Committee on Agricultural Research (SCAR) Foresight Group AGRICULTURE AND ENVIRONMENT claims: "According to Bartsch & Schuphan (2002) there is no evidence that the use of genetically modified plants would contradict sustainable agriculture and nature conservation per se. However, the effect of GMOs on the environment is a politically and scientifically much debated issue⁷." The source Bartsch & Schuphan (2002) reads as follows: "In particular, we compared the ecological performance of rhizomania resistant genotypes under various environmental conditions with regard to parameters such as competitiveness, winter hardiness and seed production. ... Field experiments carried out between 1993 and 1999 demonstrated that transgenic beets grew better than virus-susceptible beets only when the virus was present." Therefore, Marie Walls argues the safety of GM cultivated plants in her foresight report on the grounds of old information. Bartsch is currently a representative of the Federal Ministry for Food, Agriculture and Consumer Protection in EFSA.

Reuters: "EU biotech experts failed on Friday 8.6.2007 to agree on approving two genetically modified (GMO) maize varieties, sending the applications to national ministers for further consideration, the European Commission said. The first maize hybrid, submitted for EU approval by U.S. biotech company Monsanto, is known as MON810/NK603. The second GMO maize, a hybrid known as 1507/NK603, is made jointly by Pioneer Hi-Bred International, a subsidiary of DuPont Co. and Dow AgroSciences unit Mycogen Seeds. Pioneer and Mycogen also submitted an application for a third GMO, a maize known

commercially as Herculex RW and also by the code number 59122. There was no vote on Herculex RW8.”

In his review⁹ of the work "Petoksen siemenet," Atte von Wright, a professor at the University of Kuopio, claims that the author and the opponents of GM technology that support the author believe the myths they themselves propagate, and are victims of their beliefs. In his publication, Von Wright reveals that he believes that the risks posed by GM plants are small¹⁰. Scientists should know, not believe. Von Wright has no scientific evidence for his belief. Reasons to fear the ignorance of the GM crops industry: Monsanto, Syngenta, DuPont and Limagrain occupy 49% of the global seed trade and the ten largest companies currently control 64% of the global market (2006: USD 23 billion). The market share for 1996 was 37%, while in 2005 it was 49%. The seed trade industry is among the oligopolies of the world with the fewest participants¹¹.

In 1997-2004, Finnish biotechnology companies received EUR 175 818 515 in public financing. With that money, they produced losses¹² of EUR 39 004 600. Is there any clearer proof that nobody needs or wants "personal diets with the help of the genetic code?"

How could the Ministry of Agriculture and Forestry and cultivators benefit from Finland being dependent on the above-mentioned international companies that spread their power and become rich, with privatised profits and nationalised expenses?

If the GM crops industry were able to achieve what it has always promised – targeted improvement – why aren't designer grains being developed from couch-grass with the help of the genetic code? It is said that our ancestors bred our seven grain varieties from grasses – without computers and laboratories. And one more question that the authorities, researchers and the GM crops industry have not been able to answer due to their ignorance: What is the difference between the gene of a living being and a dead one, when they are physically and chemically exactly the same?

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3 Séralini et al. 2007: New Analysis of a Rat Feeding Study with a Genetically Modified Maize Reveals Signs of Hepatorenal Toxicity, 52(4) 596:602.

4 <http://www.spiegel.de/wirtschaft/0,1518,482238,00.html>

5 STT. Suomi saamassa jatkoajan dioksiinisilakalle. HS, 1.12.2005.

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7 EU:n Standing Committee on Agricultural Research (SCAR) Foresight Group AGRICULTURE AND ENVIRONMENT, Mari Walls, MTT Agrifood Research Finland, December 2006, sivu 16.

http://today.reuters.com/news/articleinvesting.aspx?type=comktNews&rpc=33&storyid=2007-06-08T121836Z_01_BRU005731_RTRIDST_0_EU-GMO-MAIZE-URGENT.XML

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10 G. van den Eede, H. Aarts, H. -J. Buhk, G. Corthier, H. J. Flint, W. Hammes, B. Jacobsen, T. Midtvedt, J. van der Vossen, A. von Wright, W. Wackernagel and A. Wilcks. The relevance of gene transfer to the safety of food and feed derived from genetically modified (GM) plants. Safety Assessment, Detection and Traceability, and Societal Aspects of Genetically Modified Foods European Network on Safety Assessment of Genetically Modified Food Crops (ENTRANSFOOD). Food and Chemical Toxicology, Volume 42, Issue 7, July 2004, Pages 1127-1156

11 <http://taz.de/blogs/saveourseeds/page/2/>. UNCTAD (United Nations Conference on Trade and Development), 2006: http://www.unctad.org/en/docs/ditccom200516_en.pdf

12 Tuomo Pietiläinen. Eniten tuetut tappiolla. HS 13.1.2006, s. B7.

Organisation: Consiglio dei diritti genetici

City: Rome

Country: Italy

Type: Non Profit Organisation

Public: Yes

a. Assessment:

Molecular characterisation

The summary of the molecular characterization is accurate but the data of the molecular analysis are confidential and therefore cannot be consulted. The presence of many copies of the expression cassette, as well as the insertion of a highly repeated region, alarm on the potential instability of insertion. Furthermore, lacking of safe data about the presence of flanking regions into the plant genome, any conclusion can be drawn on eventual rearrangements, deletions and/or insertions in the integration locus. On the basis of the provided data, to exclude the possibility of unpredictable secondary effects, caused by uncontrolled inserted elements, further analysis (composition, allergenic and toxicological effects, agronomical performances) of the final product are fundamental. In our opinion, a more stringent selection of the transformed plants is strongly advisable, to minimize the above mentioned random integration events; it would be safer to screen the organism carrying the least exogenous DNA possible, prior the product commercialization. This is a general recommendation, since in almost all the GMOs intended to be placed on the market and obtained by biolistic technique have been reported co-integrated fragments of DNA of different origin (chloroplastid and mitochondrial) and dimension.

Comparative analysis (for compositional analysis and agronomic traits and GM phenotype)

The compositional analysis shows statistically significant differences between maize GA21 and the non-transgenic counterpart. These results show that the biochemical pathway of the GM maize has been changed. Therefore a deeper evaluation of the characteristics of this product seems necessary, to verify the compositional equivalence with traditional maize.

b. Food Safety Assessment: Toxicology

The 90-days toxicological (Confidential) study on rodents shows that the GM maize has a toxic effect. The rodents undergo modifications of some haematic parameters, contents of plasma components, some organs weight etc. These results confirm the differences between GM maize and the control one in the compositional analysis and point out the presence of unwanted effects due to the genetic modification.

Allergenicity

The allergenicity of the GM maize GA21 has not been evaluated with experimental analysis and the conclusions of safety are based only on deductions. There is not substantial equivalence between traditional maize and GM maize, thus analysis should be conducted to check the possibility of allergological risk of the GM plant. Moreover, this type of analysis is recommended by Member States.

3. Environmental risk assessment

The environmental exposure to maize GA21 may derive from the unintended loss of this maize during the transportation, storing, processing and use by farmer. When the seeds of maize are released into the environment, although they have absence of a dormancy phase, they can persist and sprout the following year, particularly in regions with mild climate as the Mediterranean one, that characterizes the South Europe, including a large extent of Italy. Furthermore, the growing of volunteer plants of maize GA21 can be favoured in agricultural environment by using glyphosate. Consequently, the vertical gene flow can take place without obstacles, together with all the other varieties of cultivated maize (including the traditional ones and the local ecotypes), creating problems of genetic contamination. For these reasons we reckon that the applicant should propose a general surveillance plan, also at the level of the final user, and a case-specific monitoring plan for the control of unintended release and growing of volunteer GM plants in some critical points, e.g. stores and farms where the vital kernels are used.