



## *Meet (chemical) agriculture:*

*The world of backdoors, derogations,  
sneaky pathways and loopholes*

Part  
5

Italy beats all other EU member states in  
keeping unsustainable farming practices  
alive in intensive fruit and vegetable production



## *Summary*

25 Million kg of a very hazardous pesticide, the soil fumigant Metam Sodium, is released in the European environment every year based on the loophole that bans Metam but at the same time allows its use as “essential use”. Italy is by far the biggest user of the pesticide, 11 Million kg in 2011. Metam is used to keep monocultures in place and to serve outdated farming practices. This is in contrast to the Directive for the Sustainable Use of pesticides (2009/128/EC) and the spirit of the reform of Common Agricultural Policy (CAP) to promote good agricultural practices.

The use of Metam causes huge air pollution and endangers residents. Evidence is available that Metam poses risks on cancer and on harmful effects for the unborn<sup>1</sup>. Furthermore, metam and its breakdown products kill soil organisms like earthworms, pollute groundwater, pose a high risk for birds and mammals and a risk on pollution by long-range transport<sup>2</sup>.

Reality is that at least 15 EU Member states, among which France, Spain, Italy, The Netherlands and Portugal, are going in the wrong direction in their transition to a sustainable agriculture. The fact the 12 other Member states do not need Metam Sodium clearly questions the need of this derogation as “essential use”. Given the transition to Integrated Pest management (IPM) and the mandatory management practices for farmers by 2014, these “irresponsible 15” not only need to change practices but –more importantly- their intentions.

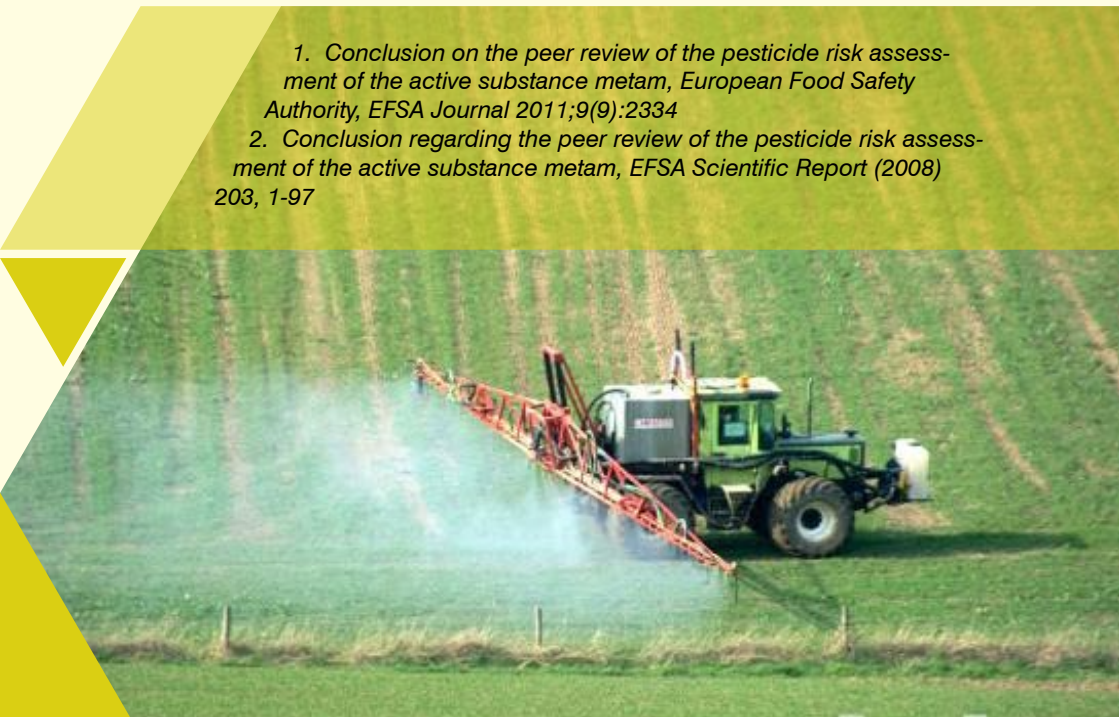
The restrictions of the “essential use” derogation these MSs imposed on themselves to protect people and the environment against the risks of Metam were largely not applied **in practice**, as shown in the survey of PAN-Europe. The obligations to draw up an Action Plan in order to phase out use of Metam were not fulfilled (see MS overview tables in this report) and the expressed intent of phasing out Metam remained just a theory since the use was generally at the same level as in 2010. Required re-labelling and measures to protect people and the environment were not imposed or not reported.

In 2012, EU Member States and DG SANCO managed to block the steps towards sustainable agricultural practices even further, by reversing their decision to ban Metam, giving it full approval until 2022. MSs ignored EFSA risk assessment and Metam’s risks to citizens and to groundwater, voting to widen its market access.

Once again it is shown that the high level of protection in the of EU Directive is disregarded when the MSs have their individual say in EU comitology decision-making, so as to please their farmers and chemical industry; upending the precautionary principle and their Sustainable Agriculture decisions.

*1. Conclusion on the peer review of the pesticide risk assessment of the active substance metam, European Food Safety Authority, EFSA Journal 2011;9(9):2334*

*2. Conclusion regarding the peer review of the pesticide risk assessment of the active substance metam, EFSA Scientific Report (2008) 203, 1-97*





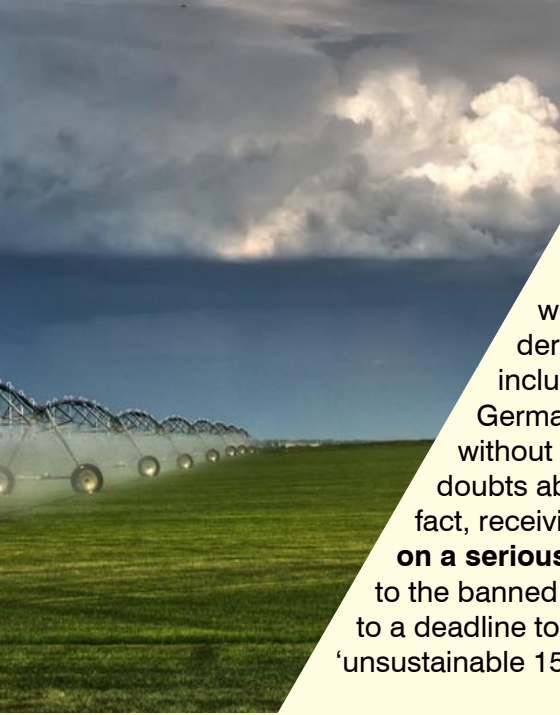
## Introduction

**Derogations** (exemptions), **loopholes** and **secrecy** are standard business practice in EU pesticide Regulations, Directives and Policy. PAN-Europe reported on the “120-day derogation” regime, which allows EU Member States to use hundreds of illegal pesticides for almost a full crop season<sup>3</sup>.

Another derogation is granted when the Commission agrees a banned pesticide is indispensable, “**essential use**”. A particularly illogical use of this derogation is when Member State (MS) countries plead that a soil fumigant (i.e. a universal poison) is essential to produce crops. As a powerful poison, **Metam sodium (Metam)** was officially banned by a 2009 Council decision<sup>4</sup>, because harmful impurities were present, consumer exposure were a risk, and its risk dossier was incomplete<sup>5</sup>.

But in the same Council decision Metam was re-authorized for use via the backdoor as an “essential use”, until the end of 2014.

Such decision-making is opaque and undemocratic -- few people outside of DG SANCO’s “agri-cocoon” knew that this highly toxic chemical,



instead of being banned as the decision suggests, had been approved for full use by this derogation.

15 MS decided their agriculture would suffer unless they took this derogation Metam Sodium. Yet 12, including the large agriculture producer Germany, decided they could prosper without Metam; and this raises strong doubts about how “essential” this use is. In fact, receiving this derogation was **conditional on a serious search for alternatives be made** to the banned yet “essential” pesticide, as well as to a deadline to stop using it. See our report on the ‘unsustainable 15’s illegal failure to do so.’<sup>6</sup>

For the present report, PAN-Europe, has obtained the second year (2011) of the 15 MS ‘essential use’ reports. We report that **little progress has been made in phasing out this poison** (as required under the essential use derogation).

Also, as we originally reported, the Metam manufacturers were seeking a stronger assurance to sell their poison. The Council has now granted authorization to use Metam for 10 years, via a ‘fast track’ authorisation procedure, despite several data gaps unresolved (pesticides cannot be used unless the use is determined to be safe). We also report on this development.

3. <http://www.pan-europe.info/News/PR/110126.html>

4. COUNCIL DECISION of 13 July 2009 concerning the non-inclusion of Metam in Annex I to Directive 91/414/EEC and the withdrawal of authorisations for plant protection products containing that substance (2009/562/EC).

5. During the evaluation of this active substance, a number of concerns have been identified which did not permit to demonstrate the acceptability of consumer exposure. Those concerns were, in particular, inadequate residues studies and lack of information on a toxicologically relevant impurity, N,N'-dimethylthiourea (DMTU). Furthermore, due to the high rate of application, a large amount of the impurity DMTU is released in the environment and the lack of data with respect to its behaviour in the environment gives rise to concern

6. <http://www.pan-europe.info/News/PR/111102.html>



## Soil Fumigation

Fumigation is the idea of saturating a volume of space with a total poison (“*omnicide*”); e.g, houses, or agricultural soil.

Metam sodium is a liquid pesticide placed into soils, which degrades into various products, including MITC (*methylisothiocyanate*), a poisonous heavy gas thought to be responsible for much of Metam’s ability to kill everything from microbes to invertebrates to vertebrates. This makes Metam a popular soil fumigant, and why its ban was opposed.

The other main soil fumigant 1,3-Dichloropropene (1,3-DCP; an industrial waste product) was banned beginning 2011 by ex-Health Commissioner Dalli. MS such as Spain, Italy and Portugal get past the ban on the basis of the derogation for “unforeseen danger”.<sup>7</sup>

7. <http://www.pan-europe.info/News/PR/110126.html>



## *Industrial Sterilization, or Integrated Pest Management?*

Metam 1,3-DCP, and other chemical fumigants are symbolic of the illogical agriculture of the petrochemical age; that nature needs to be suppressed in order to produce nature's species. Fumigants poison the entire base of an ecosystem.

In this petrochemical paradigm, biodiversity and natural elements are seen as useless or an obstruction to monoculture short-term profit. Narrow (homogenous) rotations such as monocultures disturb ecological balance (many so-called "pests" are crucial, often to an element beneficial to a farmer). Resistance of pests to pesticides--inevitable due to natural selection--increases in disturbed ecosystems. Monoculture thus leads to many dis-balances, **often causing the farmer to seek further petrochemical controls of nature...leading to further disruption.** Note how fumigants directly prevent that key element of Integrated Pest management (IPM): heterogeneous crop rotation, even though the first principle of the definition of IPM according to the Sustainable Use Directive 128/2009 **is** a conversion into a system based on crop rotation!

Complementing the bans and restrictions of dangerous pesticides, the EU's farm policy also requires Integrated Pest Management (IPM). IPM is the basis of the Directive for the Sustainable Use of Pesticides (128/2009/EC), under which every EU farmer from 2014 on must apply the general principles of IPM (listed in our earlier Metam report). Also, Regulation (EC) No 1107/2009 of 21 October 2009, concerning the authorisation of pesticides, clearly states that the pesticides need to be used properly and according to the principles of IPM.

Note within the Swiss agricultural policy it is mandatory for arable farmers wishing to receive public funding to apply a 4 years crop rotation. This is many times done by farmers sharing land.

A long-term successful agriculture operation requires close study of the environment of the crop, including the life cycles of pests; to reveal the most promising controls, as well as efficiencies, synergies and coexistence. Crop rotation, natural chemicals and cultural & physical controls are less of a threat to a farmer's key asset, soil.

More directly, farmers should take to heart the key mandate to develop alternatives in the 'essential use' derogation, **because it is aimed at weaning farmers off of such illogical action.** More effective yet, fumigants as Metam and 1,3-DCP-- clearly working opposite to IPM--should not be authorised or derogated.





# Metam sodium's toxicity ignored

(updating our previous report)

Metam quickly decomposes into MITC, so these two molecules are the main chemicals of exposure. Based on US-EPA data, Metam is a probable human carcinogen (malignant blood vessel tumours). The financially independent literature also shows many negative effects; unfortunately these better quality studies are still not taken into account in the decision-making, which keeps on being based on industry-sponsored studies. **For example**, Metam (and other dithiocarbamates, DTCs) inhibit the important enzyme dopamine- $\beta$ -hydroxylase which reduces the level of the hormone norepinephrine with possible negative effects on the central nervous system (Pruett, 2009<sup>8</sup>) and highly probably this family of chemicals act so cumulatively ...yet no endocrine disruption testing is required.

According to an independent toxicity literature review (Pruett et. al. 2001<sup>9</sup>), Metam has “**potential for immunological, developmental, carcinogenic, and atherogenic** [arterial] effects” in animals.

Metam (and its hydrolysis product, MITC) are **teratogens**, causing cranio-facial abnormalities at low doses (1  $\mu$ M) in Zebrafish (Tilton & Tanguay<sup>10</sup>; Van Boxtel et al. 2010<sup>11</sup>). In fact, after a 1991 72.000 L Metam spill into

8. Stephen B. Pruett, Bing Cheng, Ruping Fan, Wei Tan, and Thomas Sebastian, *Oxidative Stress and Sodium Methylthiocarbamate-Induced Modulation of the Macrophage Response to Lipopolysaccharide In Vivo*, *TOXICOLOGICAL SCIENCES* 109(2), 237–246 (2009)

9. Pruett SB, Myers LP, Keil DE. 2001. *Toxicology of Metam sodium*. *Toxicol Environ Health B Crit Rev.*;4(2):207-22.

10. Fred Tilton & Robert L. Tanguay. 2008. *Exposure to Sodium Metam during Zebrafish Somitogenesis Results in Early Transcriptional Indicators of the Ensuing Neuronal and Muscular Dysfunction*. *Toxicological Sciences* 106(1):103–12.

11. Antonius Leonardus van Boxtel, Bart Pieterse, Peter Cenijn, Jorke Harmen Kamstra, Abraham Brouwer, Wessel van Wieringen, Jacob de Boer, and Juliette Legler. 2010. *Dithiocarbamates Induce Craniofacial Abnormalities and Downregulate sox9a during Zebrafish Development*. *Toxicological Sciences* 117(1), 209–17.



the Sacramento river, the USEPA **admitted it had ignored for several years two manufacturer toxicity studies showing Metam caused birth defects, in rats and rabbits.**<sup>12</sup> Metam causes **asthma, and hyper-sensitivity** for at least a year (Pruett 2005<sup>13</sup>, 2009).

Workers and people in the neighbourhood of the treated fields are at risk. Available information is scarce but shows that levels of MITC 15–20 m from a field treated with Metam sodium reached maximum levels of 271 ppb, which exceeds the REL (US-NIOSH chronic reference exposure level) for disabling effects (40 ppb). Concentrations closer to treated fields are considerably higher (up to 1102 ppb). Each year, already in California, >90.000 people are exposed to too high levels of Metam/ MITC (Pruett, 2001 review).

Health levels (Pruett, 2009 review)		Industry (Dutch Auth. 2009)	Analysis MITC (fields US, Pruett, 2009)	Analysis MITC (field NL, 80-ties, answer Parliament)
0,5 ppb	Discomfort	3 ppb (15-20 meters from field on day 14, no specification)	2 ppb (average local communities)	c. 10 ppb at 1-2 KM distance from field
40 ppb	Disabling health effects	x	270 ppb (15-20 meter distance to field)	c. 100 ppb close to field
150 ppb	Lethality	x	1100 ppb (near field)	

It is remarkable that decades of use of hundreds of Millions of kg’s of these very poisonous soil fumigants which are emitted into the air in Europe have yet to result in a serious analysis of amounts emitted nor a assessment of the risks for humans.

Despite the law requiring demonstration of no risks to humans or the environment from the use pesticides, Metam has again been authorized for 10 years, although these airborne risks of Metam are to be evaluated... by its manufacturers.

12. See <http://www.nytimes.com/1991/08/23/us/epa-failed-to-evaluate-warnings-on-at-least-10-dangerous-pesticides.html?pagewanted=all&src=pm> accessed Jan. 2013.

13. Stephen B. Pruett, Qiang Zheng, Carlton Schwab, and Ruping Fan, *Sodium Methyl-dithiocarbamate Inhibits MAP Kinase Activation through Toll-like Receptor 4, Alters Cytokine Production by Mouse Peritoneal Macrophages, and Suppresses Innate Immunity*, *TOXICOLOGICAL SCIENCES* 87(1), 75–85 (2005)





## Requirements to Receive the Derogation for Metam

This derogation has a requirement for MS to annually report to the Commission progress in finding alternatives to the pesticide -- an opportunity for the public to see how MS regard soil's key role. That is, Council decision of 13 July 2009 allows essential use for 15 Member States, but not unrestricted: [Article 3 provides for the following conditions](#) (emphasis added):

- it ensures that **no harmful effects** to human and animal health and no unacceptable influence on the environment are caused ;
- it ensures that such plant protection products remaining on the market are **relabelled in order to match the restricted use conditions**;
- it imposes all **appropriate risk mitigation measures** to reduce any possible risks in order to ensure the protection of human and animal health and the environment;
- it ensures **that alternative products or methods for such uses are being seriously sought**, in particular by means of action plans
- shall **inform the Commission about the measures taken** by the 31th of December of each year and provide on a yearly basis **estimates of amounts of Metam used for essential uses**.

## Recapitulation of *First Year of MS Compliance with Essential Use Terms*

After an “access to documents” request, PAN Europe received the 2010 reports from the 15 Metam MS users, due at the end of each year. It turned out these Member States do not live up to the very rules they made for themselves: by not delivering reports in time, by giving vague answers, or by not answering the derogation’s mandatory questions at all (e.g. Greece).

Most Member States only mentioned industry initiatives and opinions. Member States apparently have great confidence in this fumigation industry in developing alternatives; however generally these industries try to relabel the use of Metam to ‘sustainable use’ or only look for other chemicals. Poland even claimed the use of Metam by industry is done “by applying IPM (Integrated Pest Management) principles to soil fumigation”. This is done in a project with the multinational DOW Chemical, which is even EU-funded (LIFE+). Spain and others expressed as their big wish to have new chemicals on the market.

Remarkably the most obvious alternatives, non-chemical alternatives like crop rotation, were hardly mentioned (only once by Ireland for potatoes).



There is clearly no intention in these 15 EU Member States to change agricultural practices in a more sustainable direction. They clearly show their intention to stick to the industrial agriculture based on monocultures and chemicals. The other 12 EU member states like Germany, Austria and Denmark have no problem to grow crops without Metam and this already makes it clear how unjustified this essential use is.

Also very remarkably is the lack of connection to the Directive for the Sustainable Use of Pesticides (128/2009/EC). This Directive, to be implemented by DG SANCO, requires a transition to IPM (integrated pest management), a management system in which non-chemical methods and practices get priority and chemicals can only be used as a last resort. Metam, eliminating soil biodiversity, cannot have any role in this IPM and it is remarkable DG SANCO is allowing this wide “essential use”.

Given **Health Commissioner Dalli** needs to stop the new attempt to legalise Metam and oblige the “15” to start developing serious action plans to implement a wide crop rotation and resistant varieties, in connection with the implementation of the Directive 128/2009 on sustainable use.





## **Second Year PAN access to documents request**

On 21 March 2011, PAN-Europe requested of the Commission the second year (2011)'s essential use derogation reports, not due until end of the year. On 16 April and 2 May 2012, PAN received the second report of 10 of the unsustainable MS, and a notice that the Commission was expecting three more (perhaps two MS who took the derogation in 2010 did not in 2011). The Commission said that a MS must agree to disclose the release of their documents. By late Dec. 2012--a full year after the deadline--PAN had not received further information. Apparently again were violating their own Council Decision by not reporting by end of 2011 (the Commission claims it takes time for MS to approve the public release of the reports...). But a year later, after PAN Europe sent the Commission a reminder, by mid-January 2013 the Commission was able to provide us with the 2011 reports of Ireland, Spain, France, Poland and the Netherlands.

**PAN has now analysed the second year of reports, and created a two year comparison table (follows) of the unsustainable 15's compliance with the various terms of the derogation.**

We can only conclude things are moving in the wrong direction, completely out of line with Directive 2009/128 objective, saying "*Member States shall take all necessary measures to promote low pesticide-input pest management, giving wherever possible priority to non-chemical methods, so that professional users of pesticides switch to practices and products with the lowest risk to human health and the environment among those available for the same pest problem*".

Member State	Poland		Portugal		Belgium	
Date of reporting	14-04-2011	14-04-2012	31 December 2010	2012	December 2010	Mar 2012
MRL status	Not required'	Same ("crop cultivation allowed to begin when no PPP in soil-shown by germinatn. of cress test.")	?	?	0,02 mg/kg (LOQ)	Same
Uses	Field use: strawberries, cabbages, carrots, lettuce, onions, garlic.					
Glass-house use: tomatoes, cucumbers, peppers.	Same	Vegetables, for non specified crops; such as on tomatoes, carrots, potatoes, strawberries, ornamentals and also in nurseries.	Same	Potting soil (all crops), potatoes, sugar and fodder beets, onions, vegetables, fruit crops, herbs, orchards (replanting), ornamentals	Same	
Relabelling?	'Label is OK'	Same	Labels are updated	Same	No	"Authorizations limited to essential uses."
Health and environm. effects	PL "did not receive information about harmful effects..."	"Per label" (summarized)	Trained personnel, appropriate application, certification.	Same	Professional users only, soil compaction, PPE, greenhouses 4 day re-entry and ventilation.	Same
Mitigation measures	Many restriction for use by operator; technique "practically eliminates the escape of volatile breakdown products to the air"	"Per label" (summarized)	Soil covered with plastic; Greenhouses sealed 7 d.	"Not to be used near water". Closed cisterns. PPE "recommended".	See previous.	Only by injection or drip irrigation. 3-wks to next soil trtmnt.
Amount	301.200 KG	419.056 KG	877.000 KG (half tomatoes), rising.	2010: 1.192.835 KG; 2011(est): 747.767 KG	127.000 KG	166.864 KG
Alternatives sought seriously, in part. by action plans	SustUse (LIFE+ paid 1,2 Million Euro to DOW chemicals ao.) and use of chlorpicrin	Project ended 12/12 IPM for mngmnt of fumigants or non-chem controls in Medit. (IT,GR) horticult. & in PL's "a s system". Prelim. conclusion: 9 BMPs (no detail here). Chlorpicrin experiments "v. satisfactory".	Soil solarization, steam, artificial substrate cultivation, use of chlorpicrin	Capsicine or caryophyllales extracts - isothiocyanates; synthetic molecules, biologics	Steaming, Biological preparations, Culticlean freesbrander , Comb. of authorised products, New unauthorised products.	Initial results indicate steaming promising but biologics not.
Remarks	PL part of SustUse by apply IPM principles to fumigation (!).		Mainly for ornamentals. Alternatives are inferior.	Same	Alternatives are more expensive	Same

Member State	Hungary		Greece		Romania	
Date of reporting	31-03-2011	28 03 2012	'2010'	2012 ("2011")	04 04 2011	01 04 2012
MRL status	0,02 mg/kg (LOQ). No MRL reqd. for tobacco ornamentals.	Same	No info	Same	?	?
Uses	Potatoes, carrots, celeriac, parsley root, tobacco; vineyard, orchard, ornamentals; glasshouses: green paprika, tomatoes, cucumbers, strawberry	Same	Potting soil and soil compost (for all crops), Indoor and outdoor use for soil treatment (for vegetable and ornamental crops), Tobacco nurseries.	Same	Vegetables and ornamental plants	Same
Relabelling?	'Label restricted'	Same	'Done'	Same	?	Restricted to vegetables & ornamentals, professional use.
Health and environm. effects	?	?	'In label'	Same	?	?
Mitigation measures	Only once per season; supervised, 200 m buffer to water.	Limited to glasshouse every 2nd yr. (due to resistance)	'In label'	Same	?	?
Amount	36.614 KG	35.469 KG	719.207 KG	505.047 KG	9,9 KG	3736 KG
Alternatives sought seriously, in part. by action plans	IPM, hydroponics & biologicals only possible with govt. subsidy. Manufacturers "should" re-search friendlier alternatives.	Same	Main producer said they have undertaken EU trials for alternatives;	Same	"None."	Same
Remarks	Alternatives only possible with state subsidy	Same	Interim reports of those trials, refined conclusions by 2011	"No applications for a pesticidal alternative have been submitted."		



Member State	Spain		Ireland		UK	
Date of reporting	?	4 / 2012	04 02 2011	14 Apr 2012	April 2011	Dec. 2011
MRL status		"Per EC decision"	0,02 mg/kg	Same	0,2 1 mg/kg for Metamitron, 0,02 mg/kg for dazomet (LoDs)	Same
Uses		Nurseries, seedbeds, vegetables, tobacco, flowers, strawberries, seed potatoes, vineyards.	Glasshouse use: Tomatoes, Carnations, Cucumbers, Ornamental, Chrysanthemum. Field use: Potatoes, Bulbs, Hardy nursery stock, Cane fruit.	Same	Soil sterilant for nursery glasshouse, outdoor & potting soils; prior to planting of fruit crops, vegetable crops, potatoes, herbs, flowers, bulbs, ornamental plants and perennial plants.	Same
Relabelling?	Yes	Same	GAP reflecting sought use.	Same	Yes	Same
Health and environm. effects	Risk mitigation measures ensure there is no harmful effect	"Per authorization" (lists GAPs).	Risk phrases according to EU	Same	Yes, determined during evaluation	Same
Mitigation measures		"Per registration" (summarized).	As above	Same	See above	?
Amount	3.189.202 KG	3.790.800 KG of Na 27.511 KG of K	8.670 KG	"About 20 HA".	TBC	121,445 KG
Alternatives sought seriously, in part. by action plans	New chemicals hopefully on the market, fluensulfona, amisulbrom, etc.	No alterns found. Field trials w/ plant & fungal extracts, fluensulfone & amisulbrom. IPM: solarisation, green manure.	Several initiatives like nematode resistance, chemicals but also substitution by crop rotation in potatoes		A project to explore the use of bio-fumigant crops as a replacement for these fumigants is ongoing.	Same
Remarks	Spain been studying alternatives for a year: no options	The two chems.: author. pending. Both IPMs: efficacy unknown.	No alternatives for essential uses	Import & use limits successful; use now stable at low level.	Dazomet	Ground-berry wilt only prevented by Metam; Chloropicrin banned 6/2013.

Member State	Italy		Cyprus		Malta	
Date of report	Answer to SANCO letter of 28 March 2011	21. 2. 12	April 2011	April 2012	04 04 2011	03 04 2012
MRL status	?	?	0,02 mg/kg	Same	?	?
Uses	Rice, lettuce and like, tomatoes, peppers, aubergines, cucurbits, carrots, bulb & stem vegetables, potatoes, tobacco; replanting vines & orchards, flowers.	Same	Nurseries, vegetables, potatoes, ornamentals, deciduous fruits, citrus fruits, and grapes.	Same	Tomatoes, aubergines, peppers, melons, watermelons, squash, cucumbers and strawberries	Same
Relabelling?	Yes	Same	The label refers to GAP that reflects only the essential uses	Same	Yes	Same
Health and environm. effects	?	?	EFSA identified risks & mitigations for workers in greenhouses and aquatic organisms	Same	Only professional users who have attended a recognised course are allowed to purchase, transport and store and use Metam	Same
Mitigation measures	Measures are provided in the labels	Same	Measures taken	"Metam's volatility & deep gw = no risk of gw contamination."	Monitoring of Metam in the environment;	Informational seminars
Amount	?	9.126.004 KG (+ 1.868.240kg MetamK)	25.800 KG	43074 KG	66.310 KG	50,046 KG (16.000 L)
Alternatives sought seriously, in part. by action plans	A summary document on the alternative methods proposed by marketing companies	Same	Soil solarization and dazomet have been tested in local trials but are not considered efficient enough; exploring other options	Same	?	?
Remarks	Efforts to obtain higher protection of operators, environment.				Information seminar for distributors	

Member State	France		Bulgaria		Netherlands	
Date of report	?	2011	2011 13.02	Jan? 2012	?	Apr 2012
MRL status		?	0,02 mg/kg	Same	?	?
Use	Légumes/plantes fruitières, essentiel. mâche, carottes, tomates, fraises, asperges, plantes ornemental, arbres/ arbustes	Same	Disinfect glass-houses soil before sowing of tomatoes, cucumbers, lettuce, carrots, tobacco peppers, aubergines.	Same	?	“Ban unforeseen & would've endangered production”
Relabelling?	?	?	?	Professional use w/ appropriate protective equipment. Application by special applicator or via drip irrigation & cover soil w/ polyethene.	?	Same
Health and environm. effects	Only one incident in 2010	No accidents reported to Min. of Agric.	No risks or incidents identified	Same	Human risk of use assessed, acceptable with mitigation.	Same
Mitigation measures		?	No risks or incidents identified	Same	?	Same
Amount	6.540.060 L.	5.035.000 L / 6 m. KG=(2010: 5.440.060 L)	3.080 L	3360 L	1.400.000 KG (2009)	~ 1.487.000 KG (~ 5.000 HA)
Alternatives sought seriously, in part by action plans	Practical advise for operators from their suppliers	Solarization. Greenhouse: Metam+ solarization. Dimethyl disulfide synergizes Metam's nematocidal; decr's use of film. Its auth. being explored w/ CERTIS EU. 1,3-DCP “unfortunately not approved; explored”.	Encouraging of companies to authorize other soil disinfectants to replace the essential use of Metam	Same	Inundation, resistant varieties, green disinfection, trap crops, etc. list of option but no action plan.	Altern's often not as effective (nematodes). Wide rotations often econom. not feasible. 5 altern's discussed.
Remarks		report in French	OSxamyl, ethoprophos and fosthiazate available to replace essential use	Same	Metam v. efficient on weeds (illegal use?)	Same



## *Summary of 2nd Year's Compliance with Essential Use Derogation*

Results for the second year of the 'unsustainable 15's compliance with the terms of the derogation for essential uses showed minor changes. None of the unsustainable 15 dropped Metam altogether. Italy, after failing to report use the first year, revealed itself as a massive user of this super poison.

Worst of all, in contradiction to the obligations for the derogation, every Member State is still illegally ignoring the requirement to write and enact a specific plan to get of this poison (a few MS are investigating alternatives, others are very small users).

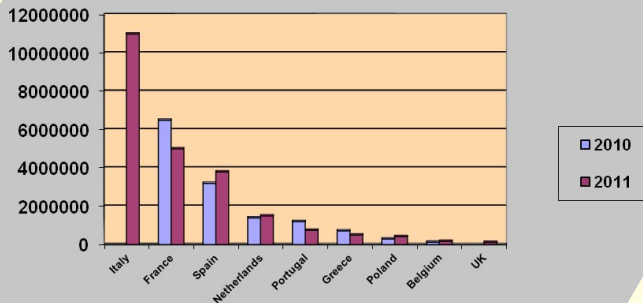
Some of the reports are unchanged from 2012--other than the amount used (which fluctuates with weather, etc.). Several report new mitigations of use. A few slightly update research into alternatives, but none report adopting an alternative.

Here is a summary of what the above table shows the unsustainable 15's accomplishments of the derogation's terms, by the end of their second year:

## 1. Use

**Overall use decreased c. 300.000 kg (IT & UK--no first year data) But IT now accounts for almost as much as all other users together. Of the second use tier, PT broke the million kg threshold but Greece significantly decreased use.**

Use of soil fumigant Metam Sodium in kg/year



## 2. Label Updated?

Overall, MS either fail to state (the '?' notation in our table) or indirectly indicate they have updated Metam's label. Little change from previous year.

## 3. Health/Ecologic Protection

Universally (both years), MS assume Metam's authorization means there are no risks (only NL assessed them, but concluded that with their mitigations, none remain. The persistence of Metam's data gaps, and the ignored literature on its risks, bely the careless assumptions of the MS.

## 4. Mitigation Measures

For the second year, no MS quantified here the effectiveness of mitigations in preventing human and ecologic risks from the use of Metam.

## 5. Action Plan to Wean Off of Metam

For the second year, no MS had any explicit action plan. Only Ireland stated it had a program to reduce Metam use and that it was successful--, but still no action plan.



**Below are further details of what the essential use 2011 reports revealed (for comparison, we keep the text of the previous year's summaries.**

### **a. Did the MS ensure no harmful effects to human and no unacceptable effects to the environment are caused?**

**2010:** First of all this provision is “Brussels magic” because the reason for a ban is that the absence of harmful effects cannot be assured. This provision is clearly nonsense. The 15 MS also don't know how to deal with it and mention the (many) mitigation measures ensuring no harmful effects will occur, France mentioning one incident, Poland saying they “did not receive information about harmful effects”, and Cyprus referring to EFSA saying risks for greenhouse workers and the aquatic organisms.

**2011:** Universally (IT & BU fail to even mention risks), MS simply claim the authorisation process guarantees no risk--no one discusses any of Metam's voluminous risk literature, whether published or part of a risk assessment. As noted in our previous report, any use of Metam should be banned because its authorisation is full of serious data gaps; and we showed how many serious toxicity published studies were ignored. A couple MS said no Metam incidents had been reported.

### **b. Are the Metam containers relabelled?**

**2010:** The answers are quite a mess. MS saying “done”, or giving no answer, or mysterious terms like “GAP reflecting sought use”(Ireland).

**2011:** Most MS continue to say either yes; or, by describing use restrictions, they appear to hint that they have updated Metam’s label.

### **c. Are appropriate risk mitigation measures taken?**

**2010:** This one gives fairly good answers by most MS, saying only professional users, soil compacting, etc. Poland however claims the measures “practically eliminates the escape of volatile breakdown products to the air”, which is not the case as is widely known. UK fails to mention anything about mitigation.

**2011:** Little change--almost all refer to mitigations required by the label. NL says it specifically evaluated Metam’s risks, finding them acceptable after mitigations.

### **d. Alternatives are seriously sought, in particular by means of action plans**

**2010:** This provision is violated most. No MS of the 15 has imposed action plans. Many MS purely rely on what the producers of Metam tell them and do not feel an own responsibility. Many alternatives are mentioned like soil inundation, resistant varieties, disinfection, trap crops, steaming and –most frequently- other pesticides like chlorpicrin and dazomet. Spain hopes there will be soon new chemicals on the market. And many mention that alternatives for the “essential use’ are inefficient and inferior and, creating the feeling they don’t believe in alternatives. No single MS is apparently looking for an alternative in a serious way, independently from the industries, let alone work on action plans. Remarkably, almost no MS mentions the most obvious alternative, a wide crop rotation. Poland reports an initiative of DOW Chemicals and others for the “Sustainable use of Fumigants” as part of a LIFE+ project in which taxpayers contribute 1,2 Million Euro’s. Poland states this is done “by applying IPM principles to soil fumigation”. It is totally unjustified to relabel fumigants as sustainable.

**2011:** Again, only one MS even mentions an action plan. Several either do not or just briefly mention the issue! Altogether, only a handful can be described as having even minimally “seriously” considered alternatives... **none are rigorous about the mandate to transition to non-poison alternatives.** Half or so regard other petrochemicals as ‘alternative’ (despite chemical fumigations history of absolute poisons). Credit is due to BE for evaluating steam to be feasible...but still no action plan to enact the mandate! NL is more specific than other MS in its denial, using circular logic: its intensive agriculture precludes robust rotation regimes of IPM. They specifically discuss alternatives, but seem sceptical.

#### **e. Amount used.**

**2010:** The amounts used are reported by most MS, except UK, Italy and Netherlands (report use in 2009). France is by far the largest user with around 6.500.000 KG. Spain (3.000.000 KG), Netherlands (1.400.000 KG), Portugal (670.000 KG) and Greece (720.000 KG) are heavy users.

**2011:** HU still fails to report any amount; UK and IT report amount for first time, revealing IT as the champion user of Metam: 11 million Kg in 2011! Most MS usage changes (a few more increases than decreases) were not large enough to be clearly due to any effort to abandon this once banned fumigant (except CY, use up c.60%, but absolute amount is small; and perhaps GR, usage down almost 40%). **Ireland specifically emphasized its success in limiting Metam use to insignificant amounts.** The small MS use insignificant amounts.







## *Industry and Council Re-Legalize Metam:*

### *'Fast Track' Authorisation*

Using the space created by the “essential use” derogation’s period (it expires at the end of 2014), the Metam manufacturing industry appears to have successfully used yet another derogation, “resubmission” (fast-track authorisation), which is meant to reduce the burden of submitting all the data required to show a pesticide is not a risk. By April 2012, an EU Regulation was adopted allowing Metam to be used for 10 years, with a few new usage restrictions, e.g. usage only every three years per field.

This fast-track authorization, several years after the original ban of Metam, still has several data gaps (e.g. groundwater and air exposures)... so what is the point of fast-tracking approvals that only violate the Regulation’s most fundamental mandate, to grant authorization to use only if a pesticide has been shown to have no risks.

The Metam applicant tried and failed to fill gaps in their failed application of 2009, now tries again. EFSA already submitted a peer-review on the revised dossier of Metam<sup>14</sup>. Although the applicant succeeded in filling some gaps where EFSA ‘assumed’ the risk was acceptable, still many

14. European Food Safety Authority; *Conclusion on the peer review of the pesticide risk assessment of the active substance Metam*. EFSA Journal 2011;9(9):2334. [97 pp.].

unacceptable risk situations remain. If you happen to live downwind of a field where soil injection is applied within 5 hours the safe level is exceeded for adults in freshly fumigated fields (EFSA report page 23), for children this is not calculated by EFSA but dangerous levels will be reached much sooner, about 1,5 hours during application, while in that case the extra vulnerability of children is not taken into account. Also, whereas EFSA risk assessment of Metam concluded to a maximum application of 153 kg/ha, SANCO only did so for potatoes, leaving ornamentals, grapes etc. use is 300 to over 600 kg/ha, which EFSA modeled to frequently cause groundwater pollution. SANCO is clearly ignoring the science of its food authority, in favor of economic rationales.

Also after application the emission continues, but again not calculated by EFSA for the vulnerable like children. The emission level put forward by industry for bystanders (0,003 mg/M<sup>3</sup> during application and 0,0005 mg/M<sup>3</sup> after application) seems unrealistically low. In the same EFSA peer-review (page 82/83) emission levels for bystanders are reported in previous analysis up to 0,054 mg/M<sup>3</sup> during injection (15 fields, NL) and 0,003 mg/M<sup>3</sup> (2 fields, NL, 1-5 days after injection) and up to 0,036 mg/M<sup>3</sup> (1 field DE, 0-4 days after injection). Further it is not sure if the industry data are realistic since EFSA didn't peer-review them<sup>15</sup>.

Metam and its breakdown products furthermore kill soil organisms like earthworms, pollute groundwater, pose a high risk for birds and mammals and a risk for long-term transport. Enough reason to ban Metam forever.

**Once again, however, short-term economic illogic has forced the EU to reverse a pesticide ban.** Following their inability to determine that use of Metam is safe (consumer exposure and lack of data on its impurity DMTU), and after discussions generated by our report, manufacturers of Metam submitted information that Rapporteur MS Belgium declared made Metam safe. After EFSA and SANCO approved the manufacturer's new assertions of safety, in April 2012 EU Regulation autho-

*15. The emission data of the applicants are not given in the EFSA report and it is not sure if the data are relevant for the actual use. Noted is: MITC air concentrations are proposed for the operator/worker/ bystander exposure risk assessment. These concentrations have not been peer reviewed by fate and behaviour experts*

rized use of Metam for 10 years, to mid-2022.<sup>16</sup> MS must complete their individual approval of Metam use by the same date. The ‘essential use’ derogation was to end, the end of 2014. The following usage restrictions apply to its re-authorisation:

- Professional applicator injection or drip irrigation (in greenhouses, only the latter), max. 153 kg/ha, only once in three years per field;
- application hour limits, protective equipment and re-entry periods;
- 24-hr. “appropriate” buffer zone for resident/bystander protection;
- “appropriate” groundwater & non-target organisms protections;
- by 31 May 2014, data on groundwater & long-range air risks of MITC (the active product of Metam application);

It appears that the EU was convinced by arguments that farmers need a least one universal poison to sterilize soil with (fumigants chloropicrin and 1,3-dichloropropene having been banned)...even though nature manages to grow plants in soils teeming with life (in fact, crops need soil’s diversity).

16. <http://eur-lex.europa.eu/LexUriServ/LexUriServ.do?uri=OJ:L:2012:114:0001:0007:EN:PDF>






## *Conclusion*

At least 15 EU Member states, among which France, Spain, Italy, The Netherlands and the Portugal, are not serious on the transition to a sustainable agriculture. They keep on using (on a large scale) Metam Sodium, known to kill all soil life and polluting the air, on a large scale to keep monocultures in place. Their self-constructed 'Council Decision' of 2009 requires them to seriously look for alternatives, through action plans. But action plans are missing in all 15 cases. In addition the other provisions of 'self-regulation' are generally not implemented in a proper way.

The fact the 12 other Member states do not need Metam Sodium clearly questions the essentiality of this derogation. Given the transition to Integrated Pest management (IPM) and the mandatory management practices for farmers , a transition which is foreseen to be implemented in 2014, these "dirty 15" not only need to change practices but—more importantly- their intentions.

The Council must be consistent: does it want to authorize poisons that disturb the base of life (soil); or does it want to sustain nature's bounty?



DG SANCO should enforce the Council Decision, forcing the “15” to create and then adopt serious plans for alternatives which fit in IPM--e.g. crop rotation and resistant crop varieties.

The fact that the decision-taking process in the Standing Committee is very untransparent and done behind closed doors also contributes to back laggards not being made visible and unhealthy situations covered. Not many people will be aware of the massive amounts of gas pumped in the fields as well as of the risks they are exposed to without knowing.

Given the number of derogations to the fundamental requirement to show a pesticide will be safe, it is also necessary to look at the ‘greater picture’. Regulation 1107/2009 provides for “the objective of protecting human and animal health and the environment should take priority over the objective of improving plant production” (recital 24). This fundamental principle of pesticide regulation is in daily practice apparently forgotten. Within the European Union, pesticides is being dealt with by DG SANCO but in almost all EU Member states pesticide policy is firmly in the hands of Agricultural Ministries. This could explain why in many cases the interests of farmers are more on National Representatives’ radar than human health and the environment. Therefore the way the rules are implemented in the reality highly contradict the objectives and provisions of the pesticide Regulation.

It is time to break the typical treadmill, where chemical companies under the umbrella of wanting to ensure farmers profit, and as a result survival in the short run, but in reality wishing to ensure their own longer term market share, and profits, often set aside real environmental and public health concerns. Instead it is time to create new alliances in the farming sector not only to ensure that farmers stop using fixed calendar spraying, overuse of pesticides, using outdated chemicals, etc. but that we also together look for real alternatives able to ensure the needed changes towards sustainable agriculture, with non-chemical methods and practices as a first choice. Supplying back-laggards with more pesticides will not only be seen as support for their management style but also stops non-chemical methods and practices innovation. In fact these kind of derogations block real innovation and the use of all existing alternatives.



## *General principles of integrated pest management*

*1. The prevention and/or suppression of harmful organisms should be achieved or supported among other options especially by:*

- crop rotation,*
- use of adequate cultivation techniques (e.g. stale seedbed technique, sowing dates and densities, under-sowing, conservation tillage, pruning and direct sowing),*
- use, where appropriate, of resistant/tolerant cultivars and standard/certified seed and planting material,*
- use of balanced fertilisation, liming and irrigation/drainage practices,*
- preventing the spreading of harmful organisms by hygiene measures (e.g. by regular cleansing of machinery and equipment),*
- protection and enhancement of important beneficial organisms, e.g. by adequate plant protection measures or the utilisation of ecological infrastructures inside and outside production sites.*

*2. Harmful organisms must be monitored by adequate methods and tools, where available. Such adequate tools should include observations in the field as well as scientifically sound warning, forecasting and early diagnosis systems, where feasible, as well as the use of advice from professionally qualified advisors.*

*3. Based on the results of the monitoring the professional user has to decide whether and when to apply plant protection measures. Robust and scientifically sound threshold values are essential components for decision making. For harmful organisms threshold levels defined for the region, specific areas, crops and particular climatic conditions must be taken into account before treatments, where feasible.*

*4. Sustainable biological, physical and other non-chemical methods must be preferred to chemical methods if they provide satisfactory pest control.*

*5. The pesticides applied shall be as specific as possible for the target and shall have the least side effects on human health, non-target organisms and the environment.*

*6. The professional user should keep the use of pesticides and other forms of intervention to levels that are necessary, e.g. by reduced doses, reduced application frequency or partial applications, considering that the level of risk in vegetation is acceptable and they do not increase the risk for development of resistance in populations of harmful organisms.*

*7. Where the risk of resistance against a plant protection measure is known and where the level of harmful organisms requires repeated application of pesticides to the crops, available anti-resistance strategies should be applied to maintain the effectiveness of the products. This may include the use of multiple pesticides with different modes of action.*

*8. Based on the records on the use of pesticides and on the monitoring of harmful organisms the professional user should check the success of the applied plant protection measures.*



## *Recommendations*

PAN-Europe also repeats last year's call to eliminate the financial conflict of interests of MS Agricultural Ministries, whose representatives on the Commission's Standing Committee stop the evolution of agricultural practices and technologies.

- ▶ Under threat of legal action, the MS must simply comply with the terms of their granted derogation; and the Commission must begin to effectively monitor the compliance.
- ▶ Make the elimination of 'bad practices' a first priority. Ban all soil fumigants to promote a wide crop rotation. Ban the neonicotinoids that ruin biodiversity to promote biological control. Limit the use of vulnerable crop varieties, make mechanical weeding standard practice, etc.
- ▶ Put an end to derogations such as "essential use" (use of banned pesticides), "provisional use" (use of new pesticides while the decision to approve is not made yet), "mutual recognition" (forcing EU member states to allow a pesticide when it is authorised in another), "prolongation" (allow market access without evaluation), "minor use" (a yet to be defined new possibility to use non-approved pesticides), "resubmission" (allow a banned pesticide to stay on the market while being assessed in a fast track priority procedure), "confirmatory data" (allowing market

access without a full dossier). It will not be easy to find EU approval without derogations. These derogations only favour standard industrial agriculture in stead of supporting sustainable innovation and practices.

► Transparency should be improved. Standing Committee should have open meetings and make meeting documents available. There is no reason why these documents and opinions should be kept secret. The lack of transparency also gives the EU a negative image of dealing behind closed doors and keeping stakeholders at a distance. In this moment of crisis and doubts on the functioning of the European Union, the EU should care about giving as much democratic tools as possible to its citizens.

► Member States looking for misusing rules and provisions should be controlled and the rules enforced by the Commission.

This documents shows that many Member States have not yet the right mind-set for a change yet. They might feel they make their farmers happy by keeping old out-dated practices in place. But this doesn't help farmers in the long run and keeps on giving agriculture its bad image. In addition it does not help their small farmers who try to be more sustainable.

Many companies offering biological control techniques or companies assisting farmers to change to integrated pest management will be in trouble getting their practices introduced in the market as long as pesticides are abundantly present. In fact, at the end of the day, the loophole policy doesn't help agriculture since sustainable practices innovation is delayed.

The Common Agricultural Policy could help implementing the Sustainable Use Directive by combining conditions for direct payment such as crop rotation ("stick"), extra payment to farmers applying more sustainable practices ('carrot'), introduction of independent advisory services, and help on innovation.





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