Collection of Practice Abstracts

P1

A TOXIC-FREE OLIVE GROVE

PRACTICAL TIPS FOR FARMERS

SUSTAINOLIVE.EU

AGROCHEMICAL IMPACTS

ON HUMAN HEALTH

- Unintentional poisoning (from dermal, oral, respiratory or ocular exposure)
- Neuropsychological and cognitive effects
- Asthma
- Diabetes
- Parkinson
- Cancer

extra info

ON ENVIRONMENTAL HEALTH

- Reduced soil fertility
- Contamination of soils and water bodies
- Modification of the balance of species in the plant community and ecosystem
- Emergence of resistant `superweeds´

LOSS OF BIODIVERSITY DUE TO

- Cancers, tumors and injuries in fauna, especially in freshwater
- Reproductive inhibition or failure
- Inmune supression
- Disruption of the endocrine system
- Cellular and DNA damage (physical deformities, decreased eggshell thickness, etc.)
- Intergenerational effects (which will only be seen in future generations)

extra info

THE ALTERNATIVES

Maybe you believe that the only alternative option to the use of agrochemical products in the olive grove is organic farming. But that´s not the case. There is a whole set and range of **sustainable management practices that, in different combinations, allow for the gradual reduction in the use of chemical inputs**, thus reducing the risks to the health of farmers and consumers and to the environment, and also improving the self-sufficience and financial soundness of olive farmers.

extra info

DID YOU KNOW THAT...

since 2001, the **Spanish public administration has banned 665 phytosanitary products from the market** (35% of all those currently authorized) ?

extra info

What is your opinion about an agrochemical product, even only a few years after its authorization, being banned due to its harmful risks on human health and/or the environment ?

WHAT LEVEL OF RISK AM I ASSUMING ?

It is not possible to accurately predict the consequences of exposure to one or more phytosanitary products, even when a detailed record of the application schedule is available. There are many factors that may potentially influence such consequences: **protection** measures, applied **doses**, **synergies** and trade-offs between products, **individual sensitivity**, etc. However, it would be interesting for many olive grove farmers to know the estimated magnitude of the potential risks they face from the application of agrochemical treatments.

A very useful online tool exists that allows to obtain various indices of the impact of agrochemical products on the farmers, consumers and environment health. We explain how to use it below.

1 Click here

2 Enter the data of the chemical treatment whose impacts you want to calculate.

BOX 1- *Start typing or select an active ingredient:*
Select the name of the active ingredient of the product.
In the example on the right we chose Glyphosate. **2A**

BOX 2- *Active ingredient:*
Inform about the concentration in percentage of the agrochemical product (only the number, not the % symbol).
In the example on the right we indicated 36%. **2B**

BOX 3- *Product rate:*
Write the dose applied.
BOX 4- *Product measurement unit:*
Select the unit of measure.
BOX 5- *Application area:*
And lastly, select the reference surface unit.
In the example on the right boxes we indicated 3 liters per hectare. **2C**

Click the *Submit* button. **2D**

FOLLOW THE EXAMPLE

New York State Integrated Pest Management

Environmental Impact Quotient (EIQ)

Field Use Calculator

Version 1.0

Start typing or select an active ingredient:
glyphosate **2A**

Active ingredient % (Example. 15% = 15):
36 **2B**

Product rate (Example. 3lb/acre = 3):
3

Product measurement unit:
liters (L) **2C**

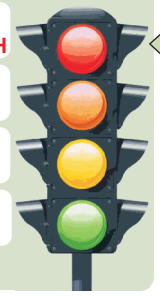
Application area:
hectare

Submit **2D**

3 The calculator will display 4 indices (i.e. 4 numbers):
Global Health Impact (*Field Use EIQ*) **ranging between 6.7 and 210**
Consumer Health Impact (*Consumer EIQ*)
Farmer Health Impact (*Worker EIQ*)
Environment Health Impact (*Ecological EIQ*)
The Global Health Impact index is automatically calculated as the average of the other 3 indices.

RISK LEVEL

150-210 VERY HIGH
100-150 HIGH
50-100 MEDIUM
6.7-50 LOW



Calculated results

Field Use EIQ equals **14.8** per acre. — Global Index

Field Use EIQ components **3**

Consumer EIQ equals **2.9** per acre.
Worker EIQ equals **7.7** per acre. — Partial indices
Ecological EIQ equals **33.7** per acre.

4 Impact scores are expressed per unit of area (acres). The option is in place to convert them to scores per hectare by dividing them by 0.405, which despite not being mandatory, should be the prefered option in countries across the whole Mediterranean.

	INSECTICIDES			HERBICIDES		
Risk	Farmers	Consumers	Environment	Farmers	Consumers	Environment
Low	<1	<0.5	<12	<15	<5	<50
Medium	1-2	0.5-1	12-25	15-30	5-10	50-100
High	>2	>1	>25	>30	>10	>100

5 To decide whether your results imply a non-assumable risk, you can match them against those in the tables on the left. These reference scores have been estimated from the EIQ values obtained for 100 different agrochemical products in key crops including olive groves, cotton, sugar cane, corn and grapevines.

KEEP IN MIND THAT...

When comparing a single 36% glyphosate application at a dose of 3 liters per hectare with a treatment consisting of two applications with a 67.9% and a dose of 6 liters per hectare, the global impact index is increased exponentially, from 14.8 (low risk) to 111.5 (high risk). The risks to health and the environment derived from the application of agrochemicals could (and should) be easily decreased: **a)** reducing the number of applications, and avoiding those of "preventive" nature, **b)** reducing the doses in each application, **c)** opting for less aggressive products, **d)** implementing management practices that balance insect populations (thus avoiding the proliferation of pests) and considering the herbaceous cover as an asset instead of a nuisance.

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