

Inspections of in-use Pesticide Application Equipment in Greece

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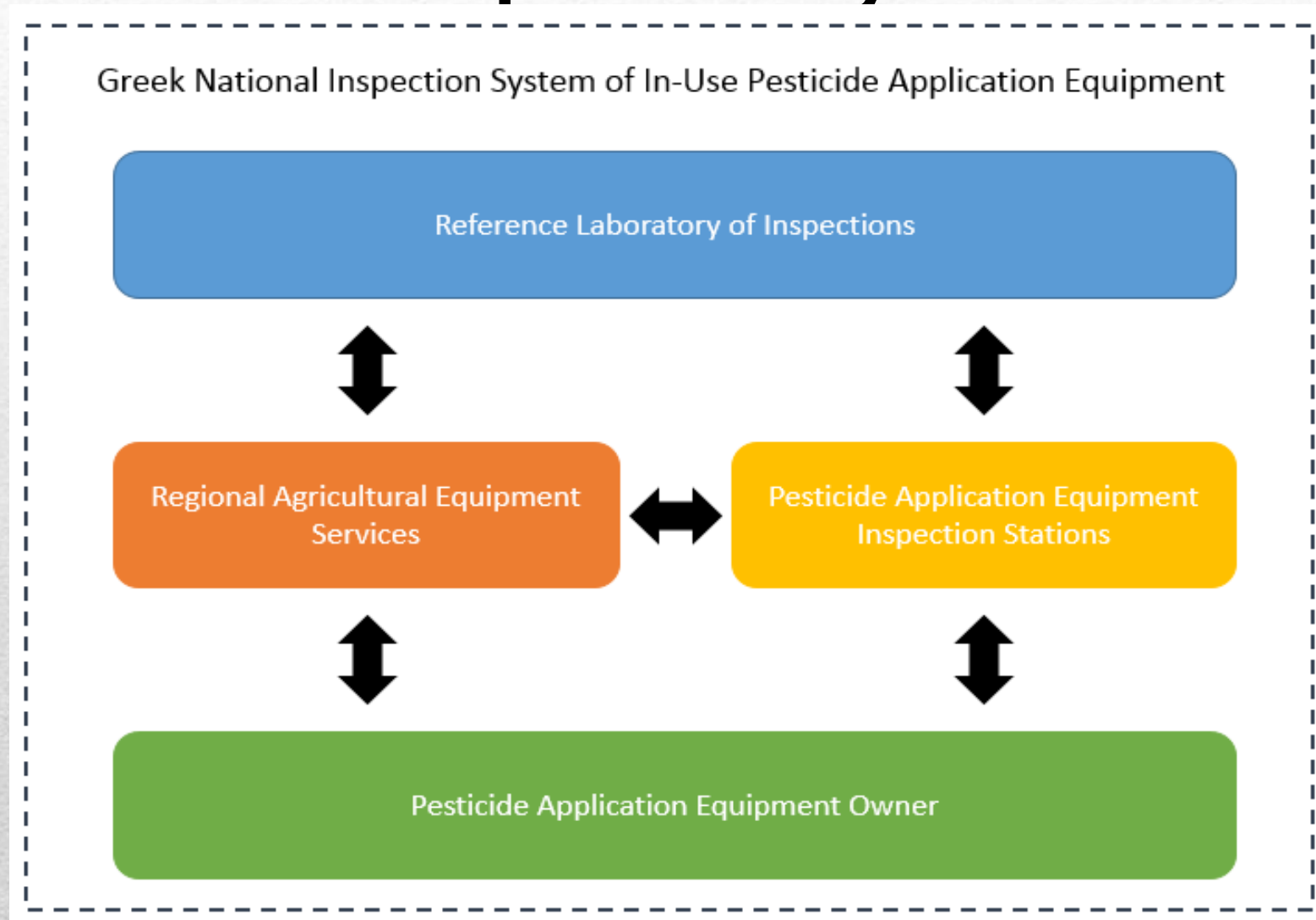
Situation in Greece until now

- Greece wasn't compliant with Directive 2009/128/EC until recently.
 - Law 4036/2012 establishes the regular inspection of the in-use Pesticide Application Equipment (PAE).
 - All PAE will have to be inspected by November 26th 2016.
 - PAE inspection will be executed every three years.
 - The Directorate of Land Reclamation Works and Mechanisation of the Ministry of Rural Development and Food (MRDF) is defined as the authority responsible for the regular inspection of professional PAE.
 - According to the Hellenic Statistical Authority (HelStat), in 2010 there were **106.485** mist blowers and **49.044** boom sprayers in Greece.
 - These figures are unsafe as they are based on statistical analysis.
 - Up to this day, at the request of the MRDF, **45.000** sprayers of the two aforementioned types have been registered at the Regional Agricultural Equipment Inventory Services (RAEIS).
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Inspection system of in-use pesticide application equipment

- It leads to an inspection **certificate** and appropriateness **sticker** mark.
 - Minimum requirements in personnel and equipment must be met to authorize the **Pesticide Application Equipment Inspection Stations (PAEIS)**.
 - The Agricultural Engineering Department of the Hellenic Agricultural Organization - “Demeter” is defined as the **Reference Laboratory** of Inspections.
 - Portable PAE and Knapsack sprayers are excluded from inspections, unless of high use in **certain regions** (high risk to human health and the environment).
 - The new PAE, purchased after October 21, 2015:
 1. is delivered to the buyer, under the responsibility of the dealer of the equipment, provided with inspection **certificate** and appropriateness **sticker** mark.
 2. is not necessary to have inspection certificate and appropriateness sticker mark, provided that a PAE of the **same type has been certified** in a qualified domestic or foreign Institute, according to EN 12761/1-3 or ISO 16119/1-4. It must be accompanied by a Declaration of Conformity by the manufacturer.
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Interactions between the stakeholders of the national inspection system



Reference Laboratory of Inspections (AgEng Dept of DEMETER)

The Reference Laboratory of Inspections is responsible for:

- The authorship of the instruction of PAE inspection **manual** to be used for carrying out inspections.
 - Assigning a **unique registration number** to each PAEIS authorized to perform inspections and keeping a nationwide PAEIS registry.
 - **Initial audit** of PAEIS and issuance of practice proof to grant authorization.
 - **Audit of the process and quality** of PAE inspections by carrying out sampling inspections in all registered PAEIS.
 - In case of not meeting the audit requirements, **propose to the RAEIS the withdrawal of authorization** of the non-complying PAEIS and inform MRDF for the imposition of sanctions.
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Regional Agricultural Equipment Inventory Services (RAEIS)

The Regional Agricultural Equipment Inventory Services are responsible for:

- The maintenance, updating and management of **the Pesticide Application Equipment Registry (PAER)** into which all in-use PAE and the results of the inspections performed by PAEIS are registered to.
 - **Issuing authorization of PAEIS** according to the control practice of the reference laboratory.
 - Shipment of the **updated registry** and a copy of each PAEIS authorization to the **Reference Laboratory** and the Directorate of Land Reclamation Works and Mechanisation of **MRDF**.
 - Informing MRDF on the **results of inspections** and of cases of non-compliant PAE.
 - The **withdrawal of the authorization the PAEIS** indicated by the Reference Laboratory of Inspections as non-compliant.
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Pesticide Application Equipment Inspection Stations (PAEIS) (1)

- Fixed or mobile installations
 - Public and/or private
 - The initial inspection cost by the Reference Laboratory is **1700€ plus VAT** and the annual monitoring cost **300€ plus VAT**.
 - The PAEIS **operate under authorization of the RAEIS** of the Region in which the head office is established, provided that the appropriateness of the PAEIS is explicitly mentioned in the record of the Reference Laboratory.
 - Using this authorization, the PAEIS can perform controls throughout the country for **five years**.
 - The PAEIS is obliged to inform the RAEIS and the Reference Laboratory of the **inspections results** that have been carried out, keep inspection **records** and cooperate with the Reference Laboratory of Inspections on possible control.
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Pesticide Application Equipment Inspection Stations (PAEIS) (2)

The PAEIS must have at least one specialized employee called **inspector**.

The inspector may be a **scientist** in a relevant discipline (Agronomist, Engineer, etc).

The inspector is present at every PAE inspection and is responsible for carrying out inspections, preparation of inspection **certificates**, granting of the appropriateness **sticker** mark, **calibration** of equipment, etc.

The equipment (officially calibrated) used should include:

- Length measuring.
- Pressure gauges control devices.
- Precision pressure gauges, for determining the pressure loss of tubes.
- Tools and suitable adaptors to allow connection of various control devices.
- Device for measuring the flow of nozzles.
- Devices for measuring the pump flowrate ability.
- Electronic archives with the data and the results of inspections.

Owner of in-use PAE

The owner of in-use PAE should ensure:

- The **recording** of his PAE in the PAER.
 - The **inspection** of the PAE in a PAEIS of his choice.
 - The **replacement** of any deficiencies regarding the PAE found during the inspection, in which he must be present.
 - Submitting a declaration in PAEIS which is sent to RAEIS, that he will **not use** non-compliant PAE until its successful inspection or that he is **willing to delete** this PAE from the PAER.
 - The maintenance, good working condition and proper calibration of the PAE before each application of pesticide, in the intervening time **between regular inspections**.
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Methodology–procedure of inspections

The PAEIS are required to carry out the inspections of PAE according to the **inspection manual of the Reference Laboratory** and the requirements of Directive 2009/128/EC.

The inspection manual of the Reference Laboratory specifies the requirements and the methods to ensure that those requirements are met during inspection of in-use PAE and has been prepared in accordance with European standards EN 13790-1:2003 and EN 13790-2:2003.

Because of the replacement of EN 13790 with EN ISO 16122, a **new version of the manual** will follow at the end of 2016 based on this new norm (only a few differences occur between the two standards) and on the first results of inspections of PAEIS.

Check points

The basic check points of boom sprayers and mist blowers are:

- Power Transmission Components
 - Pump
 - Stir set-up
 - Sprayer tank
 - Measuring, control and regulation systems
 - Pipes and hoses
 - Filters
 - Spray arm (boom sprayers)
 - Nozzles
 - Distribution
 - Fan (mist blowers)
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Inspection results (1)

After completion of the PAE inspection, the inspected equipment is classified into one of the following four categories:

CATEGORY I

In this category are included PAE that **meets the requirements** of Directive 2009/128/EC and Law 4036/2012. Inspection Certificate and sticker mark are granted, and the sticker mark is placed at a prominent spot.

CATEGORY II

In this category are included PAE **showing minor deviations** from Directive 2009/128/EC and Law 4036/2012. An Inspection Certificate listing the deviations and the obligation to correct them until the next inspection is issued along with the sticker mark, which is placed at a prominent spot.

Inspection results (2)

CATEGORY III

In this category are included PAE that **vary considerably** from Directive 2009/128/EC and Law 4036/2012. **Not sticker mark is granted and its use is prohibited.** A Inspection Certificate is issued listing the discrepancies that must necessarily be corrected in case of a new inspection, in order to be able to be classified as category I or II. The owner has to sign a declaration, to the responsible PAEIS which is then sent to RAEIS, attesting that will not use the equipment until its successful inspection.

CATEGORY IV

In this category are included PAE that has been included in Category III and whose owner **signed a declaration** attesting that he wishes to delete the equipment from the PAER and that he does not intend to repair nor to use it.

First Results

- **57 PAEIS** have been authorized.
- All operate on mobile facilities and the majority are of private interest.
- By the end of the year approximately **90 PAEIS** will be established.
- Number of spraying machines that have been tested amounts to **100 PAE**.
 1. **Unwillingness** of farmers to have their equipment inspected.
 2. Inspections and certifications are **not common** practice among Greek farmers or manufacturers
 3. **Poor state** of in-use PAE (need repair)
 4. **Economic situation** in Greece (difficulty to repair)
 5. Inspection costs around **100 €**
 6. Average cost of repair of the machinery amounts to **300€**.

The MRDF is trying to cope with the whole situation in various ways:

1. Financial **penalties** (ranging from 1000 to 30000 euros)
 2. Connection of the pesticide market with inspection certificates
 3. EU subsidies paid to farmers owning inspected PAE.
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Conclusions

- **Lack of information** to farmers on the subject
 - High **cost** (for the current economic situation) of compliance.
 - The scientific community and the state should try to **deal with the precaution** with which farmers face the need for certification of their sprayers.
 - Greek farmer needs to be informed about the mandatory check of in-use pesticide application equipment and the **impact of its misuse** and realize that the cost is relatively small, considering the benefits due to:
 1. reduced application of pesticides
 2. production of quality products
 3. safety and protection of his health and the environment.
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Thank you for your attention

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