

# AERIAL PLANT PROTECTION WORK IN AGRICULTURE IN HUNGARY

(Sent to OECD as national proposal to make best practice for pesticide aerial application)

## I. Historical background

In Hungary, aerial application of plant protection products in crop production has a long tradition and an important role. Fixed-winged aeroplanes have been used in agriculture for over 50 years and sprayings with helicopters have been carried out for over 35 years. The size of areas treated by aerial application has significantly decreased, aerial work nevertheless is still made on some 800 000 to 1 million hectares.

Legislation governing aerial work is as follows:

- **Joint Decree 44/2005 (V.6.)** FVM-GKM-KvVM of the minister of agriculture and rural development, the minister of economy and transport and the minister of environment and water on the rules and conditions of aerial work in agriculture and forestry (*hereinafter*: Joint Decree 44/2005),
- Commission Regulation (EC) 1702/2003 of 24 September 2003 laying down implementing rules for the airworthiness and environmental certification of aircraft and related products, parts and appliances, as well as for the certification of design and production organisations,
- Regulation (EC) 1592/2002 of the European Parliament and of the Council of 15 July 2002 on common rules in the field of civil aviation and establishing a European Aviation Safety Agency,
- Article 9 of Common position adopted by the Council with a view to the adoption of a Directive establishing a framework for Community action to achieve the sustainable use of pesticides,
- Regulation 18/1998. (VI.3.) NM amended by Regulation 33/2006. (VIII.23.) EüM (Regulation on epidemics: Annex 4 point 2),
- Joint Decree 38/2003. (VII.7.) ESZCSM-FVM-KvVM (Biocide Decree: Annex 8 point 6.13),
- **Law 46 of 2008** on food chain and its official control (*hereinafter* Law 46/2008),
- **Decree 89/2004 (V.15.)** FVM on the authorisation of placing on the market and use, as well as on the packaging, labelling, storage and transport of plant protection products (*hereinafter* Decree 89/2004).

## II. Authorisation

In Hungary, the *Ministerial Decree 89/2004* governs the placing on the market of plant protection products and yield enhancing substances, i.e. formulations subject to authorisation (*hereinafter*: PPP), as well as grants authorisation for the aerial application of PPPs. This Decree 89/2004 specifies data requirements needed for the preparations.

As a principle for data requirements needed for the authorisation of aerial application, Decree 89/2004 specifies that the applicant shall submit data on the advantages, justification for the need of these treatments, eventual risks to the environment and health, as part of the authorisation documentation.

In the evaluation process of the PPP formulation according to the good agricultural practice, evaluation shall include the environmental risk assessment of the aerial spraying. In

the section “environmental fate and behaviour of PPPs”, a risk assessment model of the aerial application for surface waters shall also be submitted in the data package.

Calculation of the concentrations in surface waters shall make part of the environmental risk assessment, considering the high risks posed by drift of the PPP. The Central Agricultural Office Directorate of Plant Protection and Soil Conservation (*hereinafter*: competent authority) follows the guidelines FOCUS (2001) “FOCUS Surface Water Scenarios in the EU Evaluation Process under 91/414/EEC”. Report of the FOCUS Working Group on Surface Water Scenarios (EC Document Reference SANCO/4802/2001-rev.2. 245 pp) is for the calculation of PEC<sub>sw</sub> and PEC<sub>sed</sub> values.

This program simulates three pathways of surface water contamination: drift, drainage and runoff. The aerial application greatly increases drift of PPPs from the contamination pathways. The model identifies four crop groups (field, grape, fruit and hop) for the risk assessment of drift assuming 4 different application techniques. The various crop groups cover different drift data: application of seed dressing and granules means 0 % drift, independently from the crop types, while in case of aerial application this figure is 33.2 %, i.e. the model refers to 33.2 % drift. Determination was made by using the model AgDrift.

If the low risk posed by the aerial application of a PPP is confirmed only by a special method used for reducing the risks (buffer zone, special anti-drift nozzle), the competent authority grants the authorisation of a PPP with restrictions. Furthermore, the Joint Decree 44/2005 specifies that herbicides, defoliant and desiccants, as well as substances accelerating ripening must not be applied above protected natural areas. Above other areas, such products may only be applied with suitable technique and by adding anti-drift additives. These restrictions are included in the authorisation document issued following the approval of a PPPs.

Aerial application is mostly used for desiccation and increase of ripening in sunflower, rape and soybean, in some cases in maize and forestry crops as part of insecticide treatment; or when soil conditions are not suitable for using ground machines for the treatments, e.g. in case of inland waters.

### **III. Plant protection regulatory control of the agricultural aerial spraying**

The Joint Decree 44/2005 covers any plant protection or soil management activities performed with PPPs or yield enhancing substances applied with agricultural aircrafts in agriculture or forestry in the territory and airspace of Hungary. Respect of the legislation concerning plant protection activities is controlled by the county Agricultural Office Directorate of Plant Protection and Soil Conservation (*hereinafter*: county AO Directorate), while the compliance of aircrafts and with other legislation matters is controlled by the International Traffic Authority Directorate of Aviation (e.g. annual technical check), and, at the Police of the Hungarian Republic, the Air Police Headquarters (e.g. checking the licences specified in legislation, change of spare parts in due time).

1. The plant protection expert shall, prior to making aerial spraying, notify the county AO Directorate concerned for the working area on the place and time of the aerial plant protection operation.
2. Based on this notification, the competent authority is informed on the planned aerial plant protection work as well as its place and time. Local official controls can be performed based on this information.

Not-notified aerial plant protection operation can be detected during the regular control of the use of PPPs made by the plant protection inspectors.

### **III/A. The competent authority inspects the locality of aerial sprayings and controls the implementation of conditions specified in legislation:**

1. The competent authority checks the qualification and documents of aircraft pilot, operator, as agricultural flight can only be made by a person who has
  - a. valid licence from the authority,
  - b. agricultural qualification, certificate,
  - c. and certificate for aerial spraying.
2. The inspector shall check the working map necessary to start aerial spraying, which contains:
  - a. The area designated for treatment,
  - b. The neighbouring localities,
  - c. Crops sensitive to the treatment,
  - d. Animal keeping facilities, permanent meadows, pastures for grazing animals, areas for feed production,
  - e. Protected and highly protected natural areas,
  - f. Areas sensitive from the point of view of the protection of surface and subsurface waters specified in other order of legislation,
  - g. Routes of passenger and freight traffic,
  - h. National frontiers,
  - i. Air ducts and protruding landmark.
3. The inspector shall check on the spot whether the pilot of the aircraft or his representative monitors the weather conditions of the area to be treated within a radius of 5 km, i.e.:
  - a. temperature,
  - b. wind direction,
  - c. wind velocity,
  - d. relative humidity,
  - e. data on cloud cover.
4. Observations shall be recorded in the flight diary (logbook). The client ordering the agricultural flight or, in case of a plant protection activity, the plant protection manager verifies the data by signing the logbook. The operator of the agricultural aircraft shall keep the flight logbook for 5 years as of the date of the last entry.
5. Agricultural flights can only be done with the participation of a flight signaller who is responsible for assisting the activity of the agricultural aircraft pilot and regarding the agricultural flight, for ground safety.
6. In case of agricultural flight performed with an aeroplane or a helicopter, provisions laid down in legislation shall be observed (e.g. if the working area is of irregular shape and winding, the pilot shall close the spraying device at every changing of direction over 20 degrees), and in case of plant protection operation, during turning at the end of the field, the spraying device must be kept closed that no PPP reach the area outside the field to be treated.
7. The plant protection inspector shall check the PPP to be applied as plant protection work with agricultural aircraft may be carried out only with PPPs authorized for aerial

application. During the application it is not allowed to deviate from the provisions of the authorization document.

8. Aerial plant protection shall be directed by the plant protection manager. The plant protection inspector shall check the manager's licence authorising him to market, buy and use PPP of category I, his professional qualification, and whether he handed over the compulsory document, in writing, to the pilot:
  - a. document ordering the work,
  - b. trade name of the PPP to be applied,
  - c. instructions for use suited to the local conditions,
  - d. working map,
  - e. certificate for notification concerning the protection of bees.

### **III/B. The manager's responsibility**

1. During the agricultural flight, from starting the work to ending it, the plant protection manager shall be present at the working area. He is responsible for directing the work on the site, shall, furthermore modify, suspend or, if the meteorological conditions, the way of working or the unexpected onset of other identified risk justify so, stop the work which fact shall be recorded in the flight logbook.
2. In addition, the plant protection manager is responsible for temporary storage of the PPP, its preparation, the observation of safety precautions and the adequate handling of the remaining dangerous wastes.
3. The plant protection inspector shall check the reliability of the agricultural aircraft, namely
  - a. spraying device,
  - b. equipment,
  - c. accessories.The operator shall keep them in perfect technical state with special attention to the uniformity of cross distribution characteristics of the working width, as well as to the condition of the equipment allowing transport free of leakage and dripping in closed position. Adequate maintenance of these equipments is the responsibility of the operator of agricultural aircraft.
4. The operator must notify the county AO Directorate concerned of his headquarters and premises. The plant protection inspector shall also check that the pilot has the personal protective equipment.
5. An important basic principle of agricultural flight is that no PPP or yield enhancing substance may reach any other area outside the treated field.
6. The legislation specifies that the agricultural aircraft pilot shall refuse working if the plant protection manager has not handed over or presented him the necessary documents.
7. Spraying for chemical weed control and desiccation may be performed in wind not stronger than 4 m/s and under temperature not exceeding 25 °C. During agricultural flight, PPPs for LV and ULV uses shall be applied at maximum 4 and 2 m/s wind velocity, respectively. The plant protection manager shall decide on application of PPPs over 25°C and below 65% relative humidity. It is forbidden to apply PPPs or yield enhancing substances during inversion of air temperature.

### **III/C. Sanctions of aerial spraying in case of non respect of legislation**

Article 60 paragraph (1) of **Law 46/2008** makes **sanctioning possible** specifying that plant protection penalty shall be imposed on any person who

- a. imposes risk to the environment;
- b. uses PPPs and yield enhancing substances
  - without required qualifications,
  - valid licence,
  - in a way different from the authorization,
- c. uses or operates plant protection machines or equipment without valid technical licence (type qualification),
- d. and which did not undergo temporary examination or were qualified as inadequate,
- e. does not fulfil the obligation for data supply, record keeping, and registration,
- f. applies PPP with machines or equipment qualified unsuitable or without valid technical licence in a commercial farm.