



Reference: FOCA / 311.340-00022/00009

Simplified standard permit application procedure for the operation of unmanned or model aircraft for the purpose of spreading substances from the air

In deviation from the SORA permit application procedure and based on article 9 (1) of the of the Traffic Regulations for Aircraft (VRV-L, SR 748.121.11) issued by DETEC and article 4 of the Chemical Risk Reduction Ordinance (ORRChem, SR 814.81), the standard permit application procedure for the operation of unmanned or model aircraft for the purpose of spreading substances from the air is applicable. Substances may only be spread from the air if visual contact with the aircraft is maintained at all times (Art. 17 I DETEC Ordinance on Special Category Aircraft (VLK, SR 748.941)), if the aircraft's altitude does not exceed 150 m above ground in active CTRs, if the aircraft maintains a distance of at least 100 metres from crowds (Art. 17 II (c) VLK), and if the aircraft maintains a distance of no less than 5 km from the runways of civil and military airfields (Art. 17 II (b) VLK). Furthermore, the following requirements must be met:

1 Operating conditions

1. The applicant bears overall responsibility for spreading. Specifically, the applicant must ensure compliance with all requirements of the standard permit application procedure as well as any other requirements associated with the permit. The applicant may name an employee and instruct said employee to carry out the spreading. Overall responsibility remains with the applicant, however.
2. The owner of the property must grant his or her consent to the spreading.
3. The land flown over and the airspace in which the aircraft operates must be controlled by the applicant and the applicant's employees. No people may be present in the work area.
4. Manned aircraft take priority at all times. If a manned aircraft approaches, all unmanned aircraft must cease flying immediately.
5. Flights occurring within a radius of less than 5 km of the runways of a civil or military airfield may only be carried out in coordination with Skyguide or, where Skyguide is not present, with the airfield controller. They may issue further requirements.

Federal Office of Civil Aviation FOCA

Postal address: **3003 Berne**

Location: ,

www.bazl.admin.ch



6. During spreading, the aircraft's altitude during flight is limited to no more than 3 m above the crops.
7. The following apply with respect to the spreading of pesticides and fertilizers:

Approved pesticides and fertilizers, with the exception of herbicides, may be spread. They do not need to have specific approval for aerial spreading. The application regulations defined in the pesticide authorisations must be observed.

A minimum distance of 20 m must be maintained with respect to surface waters, biotopes (in accordance with Art. 18a and 18b NCHA [Federal Act on the Protection of Nature and Cultural Heritage]), buildings, public areas, private residential zones and persons exposed to drift when spread on the following crops:

- All field-grown crops
- All vegetable crops
- Strawberries
- Ornamental lawns and athletic fields

The minimum distance requirements as specified in ORRChem and the Ordinance on Direct Payments (DZV, SR 910.13) apply with respect to use in viticulture, fruit production, berry cultivation (except strawberries) and the cultivation of ornamental plants (except ornamental lawns and athletic fields). Additionally, a minimum distance of 5 m must be maintained with respect to buildings, public areas, private residential zones and persons exposed to drift.

If the pesticide permits specify greater distances, these greater distances must be maintained.

For biocidal products, the requirements and safety clearance distances of the implementation aid "Aerial spreading of pesticides, biocidal products and fertilisers" must be applied.

The Federal Office of Civil Aviation, cantons and other offices may issue additional requirements depending on the substances to be spread.

2 Requirements relating to the aircraft

1. The aircraft must be listed in FOCA's aircraft register and marked with a SUI identification, which can be obtained through a reservation application. This identification must be non-removable or, if removed, the act of removal must destroy it.
<https://www.bazl.admin.ch/bazl/en/home/specialists/aircraft/swiss-aircraft-registry/hb-aircraft-register--overview-of-procedures.html>
2. A fail-safe mode must be present and allow the spraying process to be aborted at any time (switch off the pump) and the aircraft to be returned safely to the take-off location (return home function).
3. The fail-safe mode must be activated:
 - a) automatically if the connection is lost between the control unit and the aircraft (control link) for more than three seconds
 - b) automatically if the control unit is turned off
4. The flight route must be planned prior to the flight. The drone must then be able to fly the route automatically without any further human intervention and perform spraying

within the predefined perimeter. Activation and deactivation of the spraying process must be fully automated. Human intervention is permitted during take-off and landing. It must be possible to manually deactivate the spraying mechanism and assume control of the drone at all times.

5. The aircraft must be checked before and after every operation. Technical problems related to the battery, the sprayer nozzles, the propellers and the remote control must be rectified prior to every operation. If a part is defective, operation must be postponed. The lines and sprayer nozzles must be checked regularly to prevent leaks.
6. Flights in "Icing Condition" (temperature of less than 5°C with visible humidity) are not permitted.
7. The maximum weight at take-off must not exceed 150 kg (including batteries and payload).
8. The aircraft must undergo a spray test every three years performed by an inspection agency recognised by the Federal Office for Agriculture. New drones must also pass this spray test.

3 Requirements relating to the pilot and crew

1. Pilots must possess the required aviation skills, know the relevant procedures and be capable of coping with extraordinary situations. Emergency procedures to immediately abort the flight must be on hand and known to the pilot.
2. All personnel involved with the operation of the aircraft as well as safety staff, in particular, must be properly instructed. When filling and cleaning the tanks, all personnel must be properly equipped and dressed in accordance with the instructions for use of the product. Persons handling pesticides must be in possession of a valid special licence (DETEC Ordinance on the Special Licence for the Use of Plant Protection Products in Agriculture and in Horticulture, VFB-LG; SR 814.812.34).
3. The aerospace company must have at least one employee with a special licence (VFB-LG).
4. In the forest, only products authorised for this purpose may be spread and only after a permit to do so has been granted by the cantonal authority. Before granting a permit of this nature, the cantonal authority responsible must reach a mutual agreement with FOEN regarding the framework within which the application of plant protection products (PPPs) in the forest by a drone must be authorised (ORRChem, Annex 2.5, section 1.1 (1d) and section 1.2 (3)).

4 Requirements relating to the processes and organisation

1. Emergency procedures must be submitted for approval for the following contingencies:
 - a) injuries
 - b) if the aircraft deviates from the specified flight path
 - c) in the event of a fire or battery explosion
 - d) incoming air traffic
 - e) chemical leak
2. During spreading, it must be ensured that no persons present on the grounds come in contact with the product being spread from the air or, if exposure cannot be prevented, such persons are protected appropriately.
3. A log book must be kept. This must be used to document information about the individual flights, including take-off and landing times, take-off and landing site, the name of the aircraft operator in charge as well as any unusual technical or operational occurrences (where applicable).

5 Permit to operate the drone with selected PPPs

The aircraft and its spraying device must be granted certification in order to spread plant protection products.

Agroscope performs the technical inspections which form the basis for certification and organises both the inspection and the spray test, conducted every three years, in cooperation with the sections and the office of the Swiss Agricultural Machinery Association.

Documents to be submitted together with the application form:

1. Standard procedures must be submitted for approval:
 - a) governing the provision, operation and maintenance of the aircraft, in order to prevent the following problems:
 - i. technical problems during operation and a detailed maintenance plan
 - ii. loss of the data link during operation
 - iii. errors before and during operation
 - iv. distractions to the pilot and crew caused by external factors
 - v. leaking of hazardous chemicals in the event of a crash
 - b) to ensure that the aircraft is only operated under the weather and operating conditions defined by the controller and within the relevant limits. Operation is not permitted if the horizontal wind speed exceeds 5 m/s or, when spreading liquids, if the air temperature in the shade exceeds 25 °C or if conditions make it impossible to prevent drifting that exceeds the tolerable range.
 - c) to inspect the sprayer nozzles and the tank
2. A copy of the Special Licence for the Use of Plant Protection Products in Agriculture and in Horticulture (in accordance with VFB-LG) held by the holder of the permit and/or the employees.
3. A sketch or picture of the sprayer configuration (propeller and sprayer nozzles)

6 Liability insurance

Pilots of remote-controlled aircraft may only spread substances from the air if they have taken out liability insurance with a guaranteed amount of at least CHF 1 million (Art. 20 VLK) to cover the liability claims of any third parties on the ground.

7 Special occurrences

- 1) Any incidents involving personal injury or property damage, including the loss of the aircraft, must be reported to the competent police department using the form provided for this purpose (“Occurrence Report Form”) at www.aviationreporting.eu.
- 2) Any failure or malfunctioning of the emergency systems which did not result in damage must be reported.