

## REQUIREMENTS IN THE ESTABLISHMENT AND EXPLOITATION OF PIG FARMS

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**Abstract:** Pig farms have, undoubtedly, a series of environmental impacts, and their development in the last years have coincided with particular care for the environment. Pig raising equipments involves necessarily regulations from the authorities for environmental protection to raise and finish them; this allows taking into account all the measures to prevent pollution effectively by appealing to the best techniques available, becoming compatible with the goals of site protection stipulated by Natura 2000, observing EC requirements and other regulations in national legislation. Thus, taking into account the mandatory conditions for the protection of the quality of environmental factors, we have evaluated the situation of authorities' decisions for environmental protection in the Timiș County regarding the establishment and operation of pig raising equipments during 2012-2014, which confirms the observance of environmental protection norms.

**Keywords:** environmental agreement, environmental licence, farms, pigs

### INTRODUCTION

Rearing pigs in Romania is a traditional activity. As in the rest of Europe, in Romania the most important production category are meat pig breeds characterised by a quick rate of weight gain, by a high conversion rate of the fodder, and by a thin fat layer [1,4,7].

Establishing a pig farm or expanding existing ones as well as their functioning involve necessarily regulation papers (integrated environment agreement, environment licence, integrated environment license) from local authorities for environmental protection. Thus, we aim at taking into account, from the very beginning, the recommendations regarding the best techniques available reducing the risk of investments that do not observe the requirements regarding the protection of such environmental factors as water, air, and soil [2,5,9].

Applying new agricultural practices based on the most advanced scientific knowledge in the field of technologies, particularly ecologically viable ones, is a major requirement of sustainable agriculture. This is why the necessity of developing and implementing in practice some good agricultural practice codes [3,6]. They represent an ensemble of scientific and technical knowledge supplied to the agricultural producers and farmers to be implemented in practice. Acquired by each farmer and agricultural producer and then properly implemented, these agricultural practices can contribute to both high quality and profitable productions and p[reservation of the environment by limiting unfavourable ecological consequences at national, regional and local levels, both short- and long term [8, 9].

## MATERIALS AND METHOD

In the development of this paper, we analysed the legislation in the field in Romania, European Directives, the Code of Good Agricultural Practices, the Best Technologies Available for the Intensive Rearing of Chickens and pigs, as well as the regulations issued by territorial authorities for environmental protection, particularly the Regional Agency for Environmental protection Timisoara and the Timiș Agency for Environmental Protection.

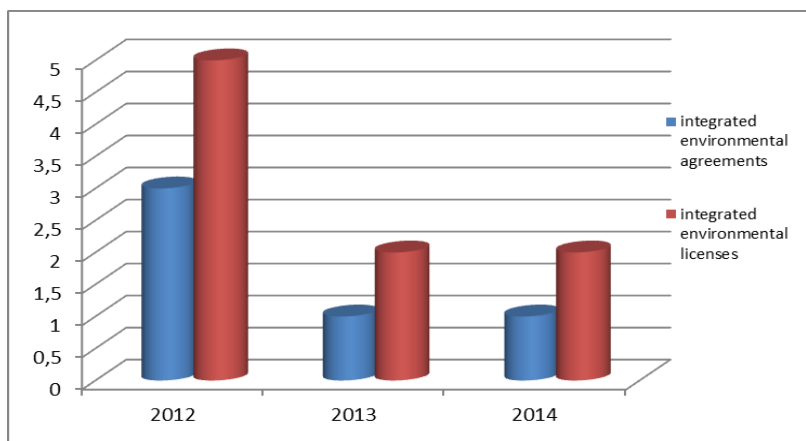
## RESULTS AND DISCUSSION

At the level of the Timiș County, starting with 2006, as a result of the enforcement of the Decision of the Timiș County Council no. 35/2006, they established the requirements regarding the establishment of pig farms as follows:

- Pig farms (rearing and finishing) should be located at least 1 km far from any human settlement and national roads and 500 m far from any county roads;
- The maximum number of pig farm establishments per territorial administrative unit should be 3, and they should be located anywhere but north from localities;
- The minimum distance between 2 pig farms should be 2 km;
- Pig farms should not be established on lands polluted by previous animal rearing activities in order to observe the measures to be taken from the point of view of environmental protection;
- Pig farms should not be established in protected areas of natural and man-made environment, in areas of major tourist interest as well as in flooding, earthquake, and landslide risk areas in accordance with the Plan for management of the national territory – section III – Protected areas, and with the Plan for management of the county territory;
- Pig farms should not be established in major water courses or in other restricted areas as settled by water regulations;
- Establishing new pig farms should avoid vulnerable areas where nitrite concentrations are above normal limits, i.e. in the communes Cenei, Foieni, Gataia, Giulvaz, Jebel, Peciu Nou, Periam, Satchinez, Tormac, Uivar, Masloc, and Pischia. Establishing new pig farms in these vulnerable areas should be done on the basis of the evaluation of the environmental impact within the procedure of granting an integrated environmental agreement and upon proving that the best environmental practices are applied;
- Extending traditional pig rearing systems based on the mechanical removal of the wastes without water dilution (non-polluting waste valorisation) should be done only if permitted by the European environmental legislation and by the best available techniques;
- Licensing building works for pig farms should be done only upon proving the possession title of the agricultural area available for the spreading of demi-liquid wastes;
- Intensive pig farms should have 2 anaerobe storage basins to allow the control of tightness and the periodical cleaning that will be sized depending on the storage capacity and on the way the wastes will be valorised;
- Wastes should not be applied by injection or spreading on agricultural slope lands over 10%, close to river courses or in dried canals, observing the Code of Good Agricultural Practices and of other specific regulations in practice;
- Waste waters from pig farms should not be used to fertilise lands (according to the criteria established by the Office for Soil and Agro-chemistry Studies of

Timisoara) with small edaphic volume, covered by rocks, alkalinised (Solonetz), stabilised or active ravines, lands with demi-stable and active glides, vertosoils with clay texture, superficial soils, erosion-threatened, with water tables below 2 or below 4 m with sandy texture, with moisture excess. Likewise, fertilised lands should be at more than 500 m from any water caption.

During 2012-2014, the documents of the Timiș territorial authority for environmental protection show that five integrated environmental agreements were issued, together with eight integrated environmental licenses and one environmental license, all of which meet the necessary conditions regarding the protection of environmental factor quality.



**Figure 1. Statistics of regulation papers issued during 2012-2014 in the Timiș County for pig farm establishment**

Source: Agenția pentru Protecția Mediului Timiș, 2015, Date statistice

Thus, in the project implementation, the requirements aimed at:

- Protecting water quality;
- Protecting soil and ground water quality;
- Protecting air quality;
- Protecting against noise and vibrations.

During the operation stage, they established the following requirements regarding authorised activities in the field:

- Waste waters discharged in the water plant should observe maximum limits as stipulated by Government's Decision no. 188/2002, with alterations and completions stipulated by Government's Decision no. 352/2005;
- Limit values for ground water pollutants should observe the values analysed before starting to operate both in farm drills and in agricultural land drills;
- The values of polluting substance emissions – sulphured hydrogen, ammonia – should range within the limits of STAS 12574/1987;
- Air pollutant emissions – powders, gaseous organic substances or vapour organic substances (total organic carbon, i.e. CO) should range within the limits enforced by the territorial authority for environmental protection;
- The values of the concentrations of pollutants specific to the activity and present in the soil within the precinct and on the soils where wastes are spread should range within the limits enforced by the territorial authority for environmental protection;
- Technological waste waters and animal wastes should be collected in waterproof basins and with a certain frequency, and be sued to fertilise lands observing the Plan for Fertilisation and the Code of Good Agricultural Practices;

- The noise level within the unit should be within the limits stipulated by the STAS 10009/1988, i.e. a maximum value of 65 dB(A);
- The operator should plan the activities producing persisting unpleasant smells and easily discernible by taking into account the atmospheric conditions, avoiding their planning during periods unfavourable to pollutant dispersion to prevent smell from being felt from far away;
- The operator should avoid producing wastes but, when this cannot be avoided, he should ensure their valorisation or, if impossible technically and economically, he will ensure neutralisation and, if the case, their removal, avoiding any environmental impact;
- Animals dead on the farm should be temporarily stored and removed under conditions enforced by sanitary-veterinary standards.

The authority competent in environmental protection responsible for the issue of regulation acts can establish, depending on the case, conditions for the stricter licensing than the use of the best techniques available; at the same time, they ask for the observance of the stipulations of the Code of Good Agricultural Practices, including the ones regarding the periods when wastes should be applied depending on each crop, the calendar of interdiction for the spreading and the interdictions regarding weather conditions and soil state, distances to water courses, captions of drinking water, protection areas, application on slope lands, on lands with moisture excess, and on lands close to inhabited areas.

Taking into account the locations of the pig farms – Peciu Nou, Biled, Checea, Satchinez, Periam, Padureni, Ciacova, Parta, Teremia Mare, Iecea Mare, Varias – we see that they are located in the left side of the county, in the plain area, maybe because of the waste management, i.e. applying them on plane lands for fertilisation.

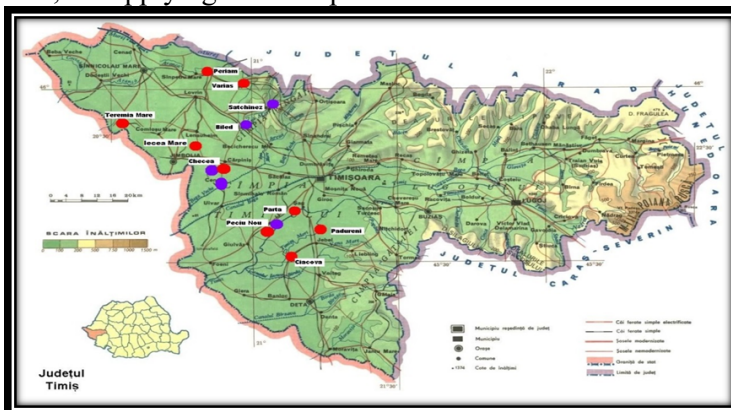


Figure 2. Map of pig farm locations in the Timiș County regulated by ARPM Timisoara/APM Timiș during 2012-2014

Source: Agenția pentru Protecția Mediului Timiș, 2015, Date statistice

## CONCLUSIONS

Intensive rearing of pigs should be carried out avoiding deterioration or significant perturbation of agreement or recreational areas or of the environment outside the farm.

At the same time, we need to take into account that, with proper functioning and observing the standards regarding the environment, this activity:

- Produces social benefits long-term through job opportunities during both the building and the operating periods;
- Ensures supplementary incomes for the small farmers and agriculture-related activities in the area.

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