

## Management of varietal purity in seed production in France: organisation and cost

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### Abstract

An important challenge for seed growers is to achieve the varietal purity standards required by the regulation or the market. For many species, mainly allogamous seed crops, varietal purity depends on the management of the surroundings of the farm. Therefore, a collective organisation, on a large scale, is needed. To help growers to resolve co existence between seed production of different cultivars and other commercial crops, several "protected areas" were created in France, according to the law set up in December 1972. The management of seed crops within this protected areas and the organisation evolution during the past years, due to the use of new tools, are described in this paper.

### Introduction

The seed grower is responsible for the varietal purity of the seed lot he produces on his farm. For most of the species, varietal purity requirements are defined by the certification standards and vary from 90 to 99.7% (for agricultural crops). Concerning vegetable seeds, for which certification is not compulsory, very high varietal purity levels are often required by the seed companies (99.9 or 100%), to satisfy the needs of the professional market. Insuring the right varietal purity has always been a real challenge for the growers. Many factors affecting varietal purity are linked to good management of the seed production crop itself and good practices on the farm: accurate rotation, control of volunteers, good concordance of flowering (in case of hybrid production), management of pollinator insects, machineries and storage facilities cleaning. For many allogamous species, the risk of undesirable cross-pollination is coming from both cultivated and wild plants growing in the vicinity and must also be controlled. This risk, linked to the environment, varies a lot according to the biology of the species. It is always much more important in hybrid productions than in populations. Different isolation distances have been edicted by National or interprofessional rulings, mainly based on practical experience. Those distances can be revised by the actors of seed sector, like in 1998 for vegetables when the new "standard convention" was agreed. When the isolation distances involve a scale or area much bigger than an average farm, an individual farmer management is not sufficient. Collective management of isolation has therefore been organised for a long time by the growers in different seed production areas in France.

### The 22 December law on "Protected Area"

During the sixties, the difficulties to manage co-existence with non-growers in seed production areas raised the need of reglementation. Its aim was to give higher priority to seed crops in specific areas. In December 1972, a law was voted by the French parliament, which gives the profession the opportunity of applying for the creation of "protected areas for seed production". Since 1972, more than one hundred protected areas were created for maize, sunflower, beets, various vegetable and recently also for hybrid rye. In these areas, all the crops of the designated species must be declared to the Public Authority. The same crop for grain production (and not for seed) is not allowed in the area, except if it is in accordance with isolation requirement defined for the seed production fields. Public Authorities can destroy a crop if the isolation policy is not respected. Legal penalties can be inflicted to farmers who do not respect the law. New protected areas are created at profession request. Public inquiries are opened at a regional level and the agricultural organisations are involved. If everybody agrees, the new protected area is officially created by order of the Ministry of Agriculture. The administration of the seed plots in the protected area is directly managed by the seed sector, organised within the GNIS (Groupement National Interprofessionnel des Semences), and local public authority.

### Management of isolation in protected areas

The management of isolation distances within a protected area is based on a compulsory declaration of seed plots location several months before sowing date. Formerly drawn on paper maps, this

"cartography" is now more and more computerized. After recording all proposed seed production plots, the computer lists automatically the fields, which are not well isolated, according to the standard or particular isolation, distances. Meeting with representatives of seed companies and seed growers are organised to find a solution to each problem. Once accepted by all parts, the cartography become official and all the crops can be sown. Consultation of the cartography is possible at any time on an Internet site.

### Management costs

This management has a cost, mainly in terms of time spent by different actors. A rough estimate of that time was made on 2 different protected areas in Anjou (Maine et Loire): the protected area for maize seed production and the protected area for several vegetable seed productions. In maize, an approximate 210 days were devoted to that management, which means for about 4000 hectares an average of 25 minutes per hectare. 2/3 of that time is spent by the farmers themselves (in fact, benevolent representatives) to prepare the isolation at a very local level. For vegetable seed, an approximate 200 days were spent for 2800 hectares (35 minutes per hectare). In that case, seed companies, GNIS and public administration spend the biggest part of that time.

### Conclusion

Management of varietal purity can be considered as efficient in seed production in France, due to several factors.

- ?? It is an activity of general interest and done on limited acreage;
- ?? There is an attractive added value for the seed growers;
- ?? There is a good organisation of the profession;
- ?? Public Authority is involved in the system.

### References

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