THE MANAGEMENT OF AGRICULTURAL PLASTIC PACKAGING WASTE: A PILOT EXPERIMENTATION IN SOUTHERN ITALY

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ABSTRACT

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In the early sixties started the “green revolution”, a term used to describe the phenomenal increase in agricultural productivity worldwide. With the green revolution new varieties of plants, called “hybrid”, have been introduced, they were more receptive to the nutrients, faster maturation, and they can grow in every season, allowing more crops throughout the year. Besides, an increase in the use of heavy machinery, a wide and extensive diffusion of plastic materials and a massive use of agrochemicals made their entrance in agriculture. Since then, agricultural plastics have replaced traditional materials, such as glass and metal because they often are less costly, safer to use, and improve production efficiency; currently they still continue to have a great deal of attention.

The plastic material generated at farm level strictly depends on ruling of specific agricultural applications, such as films to cover greenhouses and tunnel, hard sheet for greenhouses, film for mulching, rope and strings to sustain crops and trees, harvesting nets or nets for trees protection, film for silage, tubes for different irrigation technique, agrochemical containers and so on. Although with different times, all these plastics became waste and the problem of their disposal cannot be ignored.

Several studies indicate that most agricultural plastics are disposed in an illegally way, by burning them on-farm, creating fire hazards, clogging water channels, releasing high levels of polluting emissions, and/or buried and dispersed across the rural landscape. When the agricultural plastics are agrochemical containers the problem is more acute because they aren’t often rinsed, resulting contaminated with chemical residues. In Italy, as other Countries, an Agricultural Plastic Packaging Waste (APPW) management scheme have not been established yet, it is necessary to develop appropriate environmentally friendly solutions. In order to analyze the Italian current situation, the Authors, in the framework of the Agrochepack Project, funded by the European Territorial Cooperation MED Programme (2G-MED09-015), produced a mapping of APPW situation in an area of Apulia Region (Southern Italy), collecting information on cultivations (main species, cultivated areas and their localizations), plastic material and agrochemical products used to estimate APW and APPW streams (quantity, temporal and spatial distribution, problems experienced with specific disposal solutions applied) and on farmers' knowledge about the environmental damage caused by poor waste management. This information was taken as a basis for the design of a pilot plant that was realized in order to enable experimental tests of disposal of APPW in the Project area.

The first indications, emerged about two years ago, as result of meetings with farmers, pointed out that most of them didn’t pay attention both to the recovery of empty agrochemical containers and their disposal. The training activities carried out subsequently to groups of farmers, having farms within the study area, showed how the attention to the ”environmental protection" is increased, as shown by good results obtained in a second time. Therefore, farmers should participate actively in the process of recovery of the plastic material and subsequent reuse, being more involved in collection and storage, under the existing legislation.