

The Influence of Plant Protection on Lettuce Cultivated in Polyethylene Tunnels

**Maria APAHIDEAN, Carmen PUIA, Alexandru I. APAHIDEAN, Ioana POP,
Diana CENARIU**

University of Agricultural Sciences and Veterinary Medicine, 3-5 Manastur St.,
Cluj-Napoca 400372, Romania; mapahidean@usamvcluj.ro

Keywords: lettuce, double protection

ABSTRACT

In Europe the main ways to obtain earlier yields are: plastic tunnels, low plastic tunnels or directly temporary protection using different cover crops. This way plants have better conditions to grow so the productions are earlier.

The climatically conditions in Transylvania are less favorable for obtaining early vegetable production than in the South or the West of Romania. In the South and the West of Romania vegetable farmers obtain one or two weeks earlier vegetable crops than in Transylvania, the Middle and the North of Romania. Due to this reason, vegetable growers from our region (Transylvania) try to find some technological arrangements that allow them to obtain earlier crops. In our research we followed the influence of plant protection on vegetables cultivated in polyethylene tunnels. Two varieties and two different densities have been used. It has also been studied the effect of simple and double plant protection on early production.

It is known that lettuce, chicory, spinach, beetroot and carrots are the vegetables with the highest risk of accumulating nitrates and nitrites. In this experiment the level of nitrates, nitrites and C vitamin in lettuce have been studied. It has been noticed that the double protection of lettuce in polyethylene tunnels assured a better growth of plants and so an earlier production. The nitrates and nitrites content in lettuce cultivated in the polyethylene tunnels of the University of Agricultural Sciences and Veterinary Medicine Cluj-Napoca, Romania, were low. In our experiment, the values of nitrates were between 995,2 mg/kg and 1544 mg/kg and nitrites between 15,4 and 25,3 mg/kg. The ascorbic acid (Vitamin C) values were not influenced by the plant protection type. The double protection variants accumulated the highest content in nitrates and nitrites.