

## **Influence of polyethylene ageing on the transmission of photosynthetically active radiation (PAR) into a parabolic greenhouse**

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### **Summary**

Polyethylenes used as greenhouse covering have a short wave solar radiation transmission exceeding 90%, which decreases over time, by changes of the material or particles collected on its surface. The aim of this work was to evaluate the effect of the age of polyethylene on the transmission of photosynthetically active radiation (PAR) into the structure. The essay was carried out in Hirschhorn Experimental Station of the Faculty of Agricultural and Forestry Sciences National University of La Plata (34° 58'S; 57° 54'W). The greenhouse consists of three naves covered with 200 µm polyethylene placed in August 2010, August 2009 and August 2008. PAR in each of the naves and outside was measured at three dates: 02/24/2012, 03/23/2012 and 04/23/2012, using a LI-COR 191 bar. Data compiled by date were analyzed statistically by the nonparametric Kruskal-Wallis test. On the three dates, outside PAR was higher, with statically differences in two determinations, when polyethylenes were more aged. On first date, corresponding to summer, no significant differences were observed in the level of radiation transmitted by the different polyethylenes, with a transmittance of about 60%. In subsequent observations, as it advanced towards the fall, the differences between polyethylenes started to become more significant.

**Key words:** transmissivity; greenhouse; plastic