

Studies on Optical Properties of European Hornbeam Leaves (*Carpinus Betulus*)

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SUMMARY

In the process of capturing solar energy, leaves and needles of different plant species act as true solar panels. Solar radiation it is suffering complex optical changes, it is absorbed, reflected and transmitted on the contact with this bio-receptors. Due the thick foliage and because the trees leaf surface it is very big, specific phenomena of absorption, reflection, transmission, emission and fixation of solar energy are stronger than within other plant species. From the broad spectrum of solar radiation, illumination is most important for plant life and it is a decisive environmental factor for the onset and development of their main physiological processes (photosynthesis, respiration, perspiration, water and nutrient uptake, seed germination, growth and development), (Săraru, 2006). Research conducted in 2009-2011 followed the evolution of optical phenomena taking place on the leaf-area of European hornbeam (*Carpinus betulus*) trees. This has demonstrated active participation in physiological processes of these secondary radiations. In Table 1 are shown the significance of the studied types of light radiations.

Tab.1

Influence of the tipe of radiation factor

Type of radiation	Variance	%	Difference	Significance	Duncan Test
Control	1386.54	100.0	0.00	Mt.	-
Total	2674.07	192.9	1287.53	***	C
Reflected	882.96	63.7	-503.58	000	B
Transmitted	602.59	43.5	-783.95	000	A
DL (p 5%)		99.66			
DL (p 1%)		139.88			
DL (p 0.1%)		197.48			

Keywords: optical property, reflection, European hornbeam

REFERENCES

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