

# Light Transmission of Greenhouse Glass and Glass Substitutes

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Recent light transmission tests on ordinary greenhouse glass, two types of Corrolux "85" maxlite, and a German glass, Klarglas, show that greenhouse glass and Klarglas transmit approximately the same amount of total light whereas the two types of Corrolux transmit from 15-37% less total visible light.

Total light, as used in this article, equals direct plus scattered light. The flower grower is interested in total light transmitted into the greenhouse whether it be direct or scattered. All the information included refers to light at right angles to the transmitting media. More research should be done to determine what effect the angle of incidence has upon the percentage of total light transmitted.

The curves in fig. 1 represent the percentage of direct light transmitted relative to air as measured with a Beckman Quartz Spectrophotometer. The German Klarglas was not subjected to this test. This is included to show the trend through the visible and the infra red wave lengths and can be used to interpolate percentages of total light transmitted for the wave lengths not included in fig. 2.

The curves in fig. 2 represent the percentage of total light transmitted relative to air as measured using an integrating sphere. These values are of major importance because they show what actually passes through the glass or plastic to the plants in a greenhouse. A single replication showed the same trends. The curves terminate at 5780 angstroms which is the limit of the light source used.

The curves of fig. 2 generally follow the curves of fig. 1 except for the fact that the "smooth" and "rough"

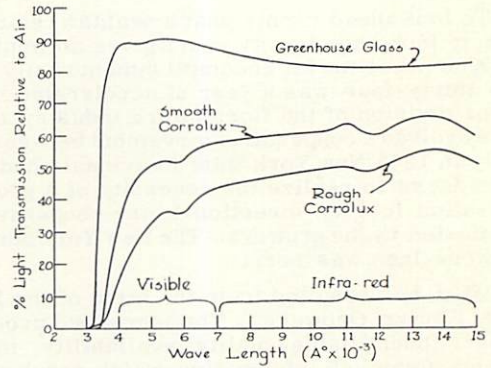


Fig. 1

samples of Corrolux switched positions. This can be explained on the basis that the "rough" Corrolux scatters more light which would not be picked up by the Beckman meter. Also, the "smooth" surfaced Corrolux appears to have more fibrous material than does the "rough" surfaced Corrolux. The characteristic dips do not appear in fig. 2 as in fig. 1 because the observations were fewer in number.

There are many other plastic glass substitutes besides Corrolux which were not subjected to the above transmission tests but it is believed that they will transmit about the same percentage of light.

Remember that once you use plastic substitutes you have a permanent shade. If you want more light, the shading cannot be washed off.

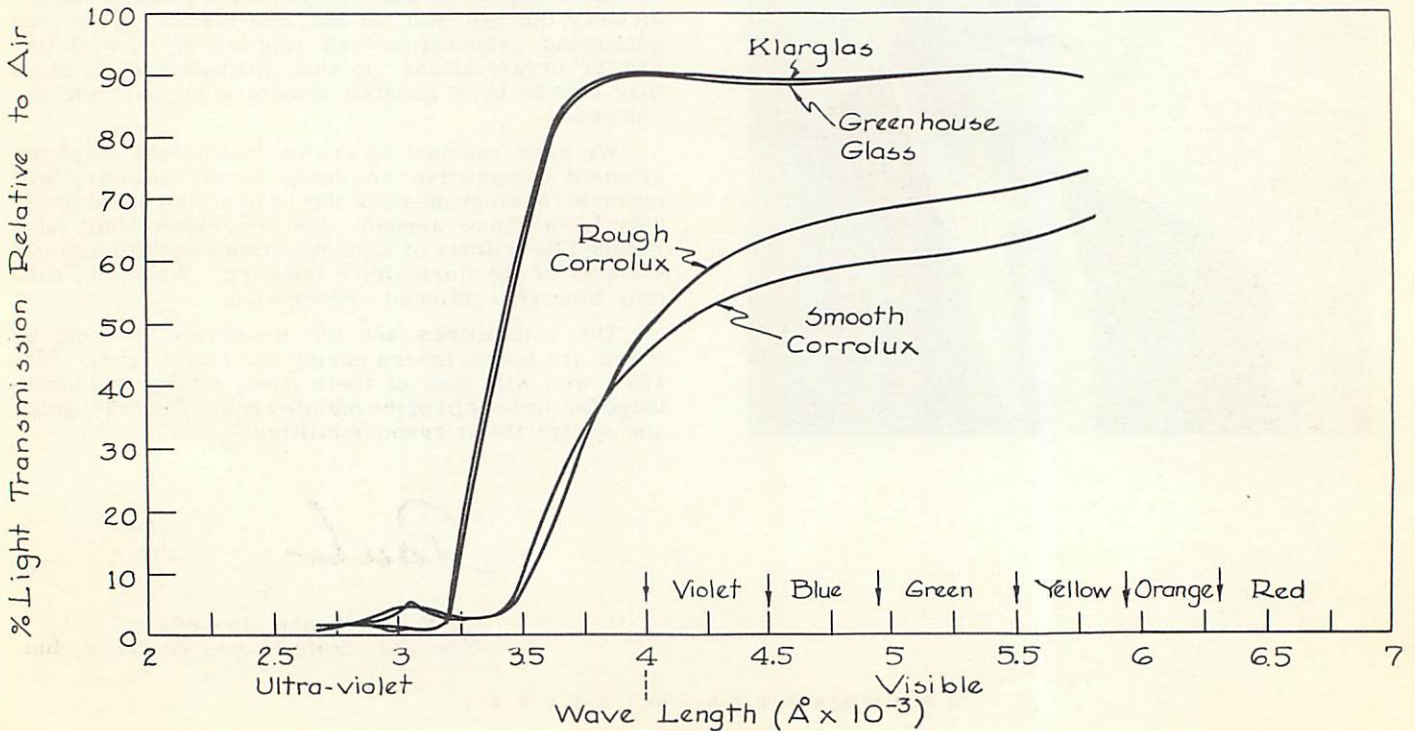


Fig. 2