LIGHT-ADJUSTING POLYETHYLENE FILMS FOR GREENHOUSES

Description
Special additives were designed to modify low-density polyethylene films intended for greenhouses. The films exhibit photofluorescent properties and are capable of changing the composition of the solar radiation passing through them.

The technology for producing light-adjusting films was upgraded; climatic and biological tests were performed under the conditions of Siberia. The service life of the films is three years.

![Image of 30-days cabbage seedling (Nadezhda kind) grown using Urozhai-3 film developed at the Institute of Petroleum Chemistry and produced at the Polymer JSC (Kemerovo) (on the right) and using an unmodified low-density polyethylene film (on the left)]

Technical appraisal and economic benefits
The photofluorescent properties of the films promote the growth and development of greenhouse cultures. The use of light-adjusting films increases the yielding capacity by 20-90%, depending on the species and sort of crops, and reduces the periods of growth and ripening by 2-3 weeks compared to films of other classes.

Application areas
For coverage of greenhouses and hotbeds with agricultural and ornamental plants.

Development stage
Commercial production was launched at the Polymer JSC (Kemerovo).

Patent situation
A patent was granted in Russia.
Know-how is available.
Commercial offers
License agreement; know-how contract.

Estimated cost
The cost of the light-adjusting films is 20-25% higher than that of films of the base low-density polyethylene produced under the same process conditions.

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