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Study of the Process of Ignition of Forest Combustible Material by Focused Solar Radiation

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Annotation. *One of the key areas for ensuring the safety of natural ecosystems and developing effective fire prevention measures is understanding the nature of forest fires. By establishing the patterns of influence of natural and anthropogenic factors on the burning of vegetation, the ways and methods of protecting forests from fires can be improved, which is especially important under conditions of global warming.*

The paper presents the results of experimental studies of the process of ignition of ground forest combustible material in the form of moss, grass, leaf litter, spruce and pine needles, small branches, and bark by solar radiation focused by glass containers. It has been established that from the materials under study, moss, grass and leaf litter, or ground cover with their predominance in composition exhibit the ability to ignite under the influence of a focused heat flux. Glass jars with a capacity of 1 liter or more filled with water or other transparent liquid left in the forest can cause fire. Empty glass jars with a capacity of 0.5 to 10 liters, empty and liquid-filled bottles with a capacity of 0.33 to 1 liter, as well as glass fragments from the said containers are not capable of focusing the flux of solar radiation to a value sufficient to ignite the ground cover with a humidity of 10–30 %.

Key words: *forest fire, focused solar radiation, forest combustible material, ignition.*

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