

Original article

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## Surface Runoff in Various Forest Growing Areas in European Russian Federation

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**Abstract.** *The studies were carried out on catchments in the zone of coniferous-broad-leaved forests (Moscow region, Istra district, association "Istralshoz" and state farm Kostrovsky) and in the northern forest-steppe (Gorky region, Gorodetsky forestry and state farm Volzhsky). In these catchments, which include areas of agricultural fields and forest plantations, dams were equipped with spillways and recorders of the «Valdai». Studies in these catchments have shown that coniferous-deciduous stands transfer most of the surface runoff to subsurface runoff, compared to agricultural field plots, while solid fractions of the surface runoff are largely retained. In addition, coniferous-deciduous plantings retain precipitation by 30–40% with their crowns, and due to the special properties of the forest floor, they reduce the amount of harmful chemical compounds coming from the fields into the subsurface runoff. On this basis, a patent-protected method has been developed to determine the minimum area of coniferous-deciduous stands depending on the size of the field, which allows for complete purification of surface runoff from solid fractions that lead to shallowing of rivers, and from polluting chemical elements of water flowing from the fields.*

**Key words:** *Surface runoff, subsurface runoff, catchment, planting, agricultural field, precipitation, solid fractions*

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