70-year forest treatment operation experience in Mid Volga conditions

F. Iljin – *East-European Forestry Experimental Station, branch Russian Research Institute for Silviculture and Mechanization of Forestry, researcher, candidate of biological sciences, Kazan, Republic Tatarstan, Russian Federation, ilin2566@mail.ru*

Keywords: *forest treatment, reconstruction, shaping, undergrowth, forest stand, silvicultural efficiency.*

The paper presents background of establishment of VNIILM subsidiary East European forest experiment station experiment and production sites, operation technology, and assessment of forest treatment silvicultural efficiency with reconstruction of low value young stands and shaping of stands from undergrowth after gradual and clear cuts. The operations were conducted in the Mid Volga Republics – Tatarstan, Udmurtjia, Chuvashiya and Mary El.

The studied sites proved an opportunity to change tree species composition, structure and quality of low value hardwood young stands into valuable softwood stands. A wide range of harvesting operations with conservation of undergrowth and young coniferous growth resulted in shaping of valuable stands with prevailing pine and spruce.

The studies proved that the best silvicultural efficiency indicators are pine stands with total reconstruction with growing stock exceeding modal stands by 109–288 м³ per ha. Larch and spruce stands with a corridor reconstruction lose to them insignificantly. Similar indicatyors showed operation shaping stands from undergrowth with silvicultural efficiency amounting to 31–208 м³/ha.

Key conclusions – reconstruction of low value young stands and shaping stands from undergrowth comply to the silvicultural forestry goals, promote shaping of valuable productive stands and lead to conservation and build-up of Mid Volga forest protective, water conservation and healthy functions.