

Forest shelterbelt impacts on snow spread pattern with extremely strong winds in Crimea steppe conditions

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Keywords: steppe Crimea, forest shelterbelts, wind speed, protective plantations, shelterbelt establishment shelterbelt design, snow spread

Forest reclamation stands are specific biological edges and the boundaries of phyto-vegetation of agricultural areas. They shape a special microclimate that differs from open landscapes. In winter, shelterbelts rearrange snow cover. The main objective was to define shelterbelt impacts on snow cover in adjacent areas and show adverse natural (strong wind) in unprotected areas.

In 2012, winter in the Crimea was cold and snowy with extremely strong winds. After an unprecedented heavy snowfall and powerful winds shelterbelt impacts on distribution and capture of snow cover was under study. For identification of shelterbelt impact efficiency on snow spread after heavy snowfall and extremely powerful winds snow depth was measured at various distances from forest reclamation in the fields that are protected with shelterbelts of various designs. 0,1 m³ snow samples were taken in a protected shelterbelt protected plot on leeward side in front of the plantation and in unprotected plot (snowdrifts).

Unprotected fields are subject to adverse impacts. In these areas in addition to lack of snow cover slip fertile soil layer is disturbed as well which is unacceptable for agriculture. The most positive impact was found in crop fields protected with closed shelterbelt framework. Current state of protective plantations and its proper shaping in the peninsula is an urgent issue that needs a further comprehensive study. Great attention should be paid to restoration and establishment of new shelterbelts that will promote agricultural product yield and quality all the year.