

Objective of this research was to evaluate and select local ecotypes and imported varieties of grasses and legumes resistant to drought and cold and suitable for the introduction into degraded rangeland and/or for the production of forage.

The following characteristics have been measured or scored: Field germination; tillering; summer survive; spring regrowth; winter survive; green and hay yield; seed yield;

A/ Forest steppe zone;

Since 2006, field experiment was conducted in Bornuur soum, Tuv province, that includes the western part of the [Khentii Mountains](#). Bornuur is located in central arable region of Mongolia.

By climate condition Bornuur included to cold region, the average precipitation for growing season is 160-235 mm and air temperature is 15°C. The growing period is continuing at 90-120 days. Coldest time of year is January (-20 °C) and warmest is July (15-20 °C).

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frost of year observed from end of August to start of September and last - from end of May to beginning of June.

In territory of Bornuur, that includes to the Mongolian-Dahurian mountain forest steppe plant-geography region, distributing mountain steppe vegetation associations.

Out of 65 samples of 45 varieties of 31 species (7 species of legumes and 24 species of grasses) the 33 samples of 12 species (3 species of legumes and 9 species of grasses) were overwintered in 2009 in their life and 41.9% of them were native. From legumes the varieties "Burgaltai" (native) and "Nutag belcheer 1" (IM) of *Medicago varia* and from grasses *Stipa sibirica*

(native),

Psathyrostachys juncea

(native),

Elymus dahuricus

(IM) and

Agropyron mongolicum

(IM) have been best species by their winter survive, hay and seed yield and other characteristics. The

Astragalus adsurgens

from Inner Mongolia engaging the interest by highest hay yield and protein content although did not established seed yield.

B/ Steppe zone;

During the 2004-2008 in Turgen (28 km from Ulaanbaatar) was conducted field experiments. Turgen located in southern part of Khentii mountains, includes to the forest steppe zone and Mongolian-Dahurian mountain forest steppe plant-geography region, but, depending from climate changes last years dried.

By climate condition Turgen includes to the cold region, the average precipitation for vegetation period (May to August) is 194.4 mm and air temperature is 13.9°C. Coldest time of year is January (-24.8

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frost of year observed from mid of August and last - from beginning of June.

In Turgen the 70 samples of 34 species planted in non irrigated condition in 2004-2008, the 11 samples of 7 species established and survived until 2008. All other samples failed to establish or did not survive.

In steppe zone selected the *Agropyron mongolicum* from Inner Mongolia and native *Stipa sibirica*

have a good summer and winter survival, moreover, these grasses have a possibility to give biomass & seed yield in dry condition of steppe zone.

The *Ceratoides arborescens* from Inner Mongolia selected by one of important plant in steppe zone, have a good summer & winter survival and high biomass yield, but impossible to establish seed yield.

In addition, the *Elymus dahuricus* (IM), *Psathyrostachys juncea* (IM & USA), *Agropyron cristatim* (native) and *Agropyron repens* (RUS) growing in steppe zone, but impossible to produce biomass and seed yields.

Other samples, especially legumes, have not possibility to survive in dry steppe of Mongolia.

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