



Indicators of the Viability of Nutrient Plant Species in Agrophytocenoses, Established With the Participation of Local Varieties

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Annotation: The article describes the significance of the viability indicators of nutrient plant varieties in pasture agrophytocenoses created in hilly conditions with the participation of local varieties.

Keywords: natural pasture, pasture crisis, pasture agrophytocenoses, shrub, semi-shrub, herbs, species, variety, viability, productivity, hilliness, phytomelioration.

Relevance of the topic. The natural pastures of our republic are the main source of nutrition in the development of animal husbandry, which is considered an important branch of the national economy. In recent years, the pasture crisis has been aggravated every day due to many negative situations, such as environmental degradation, global climate change, misuse of natural pastures, and the tragedy of the island.

However, as a result of improper use of pastures (the use of shrubs and semi-shrubs for subsistence needs, geological exploration, the use of underground minerals, overgrazing, and so on), the crisis of pastures in our country has reached 38-45%.

As a result of many years of research at the Research Institute of Animal Husbandry and Desert Ecology, more than 300 plant species of the flora of Central Asia have been tested and drought-resistant, high-yielding species rich in protein and valuable nutrients have been identified, and 18 breeding varieties have been created from them.

The creation of artificial agrophytocenoses with the participation of these breeding varieties serves not only to increase the productivity of pastures, but also to enrich pastures with new nutritious plant species.

Sources and research methods. As a source of research, the light gray soil of the Nurata Upland of the Navoi region, pastures of the ephemeral-ephemeroid type, as well as promising plant varieties consisting of shrubs, semi-shrubs and herbs (black saxaul, isen, teresken, sorghum, koirovuk, astragalus, male grass).

Planned field experiments, laboratory studies, phenological observations, biometric measurements, the process of collecting food stocks and other series of issues were carried out on the basis of the use of crop production, botany, plant introduction, methods generally accepted in agriculture [1,3] and other methodological manuals.

Research results and their evaluation. The research was carried out on the experimental field "Nurota" of the Research Institute of Karakul Breeding and Desert Ecology (RIKBDE).

Pasture agrophytocenoses created by the seed method were tested in the following proportions and proportions:

- a) shrubs 50% + semi-shrubs 25% + herbaceous species 25%;
 b) shrubs 25% + semi-shrubs 50% + herbaceous species 25%;
 c) shrubs 25% + semi-shrubs 25% + herbaceous species 50%;

According to the results of the research, it was found that the indicators of growth, development and productivity of plants in the agrophytocenosis of the variant 25% shrubs + 50% semi-shrubs + 25% herbaceous species are high, and the data obtained in this variant are presented.

In hilly conditions, pasture plants sown in January sprouted in April. In subsequent years of vegetation, shrubs and semi-shrubs grow from old branches, and in March, perennial grasses from rhizomes grow. All varieties of plants (except saxaul variety "Nortuya") entered the generative phase in the 2nd year of vegetation. Saxaul variety "Nortuya" entered the generative phase in the 7th year of vegetation. The duration of vegetation of herbaceous species ("Oktog" astragalus, male grass "Ishonch") is 115-125, and the duration of vegetation of semi-shrubs ("Dzhaihun" sorghum, "Karnabchul" isen, "Tolkien" teresken, "Salanga" koirovuk) is 220-260. It has been established that the duration of vegetation of the shrub variety (saxaul "Nortuya") is 255-260 days.

Studies conducted in hilly conditions showed that all pasture plants in the sown fields died by 21.6-35.9% in the first year of their vegetation and partially in the second year by 2.0-6.1%. In subsequent years of vegetation, there were no changes in the number of plants in the fields. It is shown that the properties of habitability also depend on the type of plants, and the highest survival rate of plants in the sown fields are Astragalus "Oktog" (69.6%), male grass "Ishonch" (71.1%) and isen "Karnabchul" (67.6%). This indicator was 56.4-65% for the varieties of saxaul "Nortuya", sorghum "Dzhaihun", teresken "Tolkin" and koirovuk "Salang" (Table 1).

Experiments on the creation of pasture agrophytocenoses from pasture nutrient plants in hilly terrain have shown that the viability of cultivated species is higher in the varieties "Karnabchul", "Oktog", "Ishonch", but lower in "Nortuya", "Dzhaihun", "Tolkin", "Salang". The overall survival rate turned out to be close to that for the individual content of each species (60-70% on average). These indicators indicate that the creation of pasture agrophytocenoses, consisting of promising varieties of pasture nutrient plants, is suitable for hilly conditions.

Table 1. Viability of plant varieties in agrophytocenoses. RIKBDE, experimental field "Nurota".

Life forms and parts of plants	Plant varieties	The number of plants in the amount per thousand pieces, % in the denominator				
		1 (2015)		2 (2016)	3 (2017)	6 (2017)
		April	September			
Shrubs 25%	Saxaul variety "Nortuya" 25%	$0,7 \pm 0,03$ 100	$0,45 \pm 0,02$ 64,2	$0,43 \pm 0,02$ 61,4	$0,43 \pm 0,02$ 61,4	$0,43 \pm 0,02$ 61,4
Semi-shrubs 50%	Sorghum varieties "Dzhaihun" 12.5%	$6,7 \pm 0,20$ 100	$4,3 \pm 0,15$ 64,1	$4,0 \pm 0,13$ 59,7	$3,9 \pm 0,14$ 58,2	$3,9 \pm 0,14$ 58,2
	Variety Izen "Karnabchul" 12.5%	$6,5 \pm 0,30$ 100	$5,1 \pm 0,24$ 78,4	$4,7 \pm 0,23$ 72,3	$4,4 \pm 0,19$ 67,6	$4,4 \pm 0,19$ 67,6
	Teresken variety "Tolkin" 12.5%	$6,3 \pm 0,25$ 100	$4,6 \pm 0,17$ 73,0	$4,3 \pm 0,14$ 68,2	$4,1 \pm 0,13$ 65,0	$4,1 \pm 0,13$ 65,0
	Variety koirovuk "Salang" 12.5%	$6,2 \pm 0,21$ 100	$4,4 \pm 0,16$ 70,9	$4,1 \pm 0,15$ 66,1	$3,5 \pm 0,12$ 56,4	$3,3 \pm 0,12$ 56,4
Herbaceous species 25%	Variety Astragalus "Oktog" 12.5%	$6,6 \pm 0,32$ 100	$5,2 \pm 0,26$ 78,7	$4,9 \pm 0,22$ 74,2	$4,6 \pm 0,23$ 69,6	$4,6 \pm 0,23$ 69,6
	Variety of male grass "Ishonch" 12.5%	$9,7 \pm 0,51$ 100	$7,5 \pm 0,40$ 77,3	$7,1 \pm 0,33$ 73,1	$6,9 \pm 0,38$ 71,1	$6,9 \pm 0,38$ 71,1

In conclusion, it should be noted that the viability of plants in cultivated fields is 56.4-71.1%, their growth height is 65.4-90.2 cm, the average hay yield is 20.1 q/ha, which indicates that the creation agrophytocenoses from promising varieties of pasture nutrient plants are suitable for hilly terrain conditions.

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