

**RESULTS OF BIOMETRICAL PARAMETERS
STUDY ON ALTAI ONION (*Allium Altaicum*)**

*Javkhlanbayar.Ch**, *Batdelger.B**,
*Batmunkh. L**, *Buyanchimeg. B***,
**Faculty of Agro-Ecology, University of Life Science*
***MonChemo Industrial and science Co.Ltd*

Abstract: *Altai onion grows predominantly as compare to the other onion family in the area. But in recent years, Altai onion and wild garlic reserve has become exceedingly scarce due to mass consumption and overharvesting. Therefore, we conducted comparative research on ecotypes of bulb yields and selected cultivation as well as planting of pre-selected species of onions, which will assist in creating new onion hybrids and further research required on cultivation of these hybrids.*

Key words: *Altai onion distribution, clump, length and venation.*

**РЕЗУЛЬТАТЫ ИССЛЕДОВАНИЯ БИОМЕТРИЧЕСКИХ ПАРАМЕТРОВ
АЛТАЙСКОГО ЛУКА (*Allium Altaicum*)**

*Джавкланбаяр Ч., Батделгер Б.,
Батмунх Л., Буянчимег Б.*

**Факультет агроэкологии, Университет естественных наук, Улан-Батор,
Монголия*

*** Компания МонЧемо, Улан-Батор, Монголия*

Аннотация: *Алтайский лук доминирует в сравнении с другими представителями семейства луковых. Но в последние годы запасы алтайского лука и дикого чеснока стали чрезвычайно малы из-за массового потребления и чрезмерного собирательства. Таким образом, мы провели сравнительные исследования по экотипам лука и выборочную культивацию, а также посадки заранее выбранных видов лука, которые помогут в создании новых гибридов лука и дальнейших исследованиях, необходимых для выращивания этих гибридов.*

Ключевые слова: *распределение алтайского лука, пучок, длина и жилкование.*

Brief introduction: *Altai onion or Alliceae J.Agardh is an ancestor of perennial wild bunching grassy plant. Stalk is 40-60 cm in length; vigorous. fitsular, inflated in the middle /7-20 mm in diam./ and umbel is globular, many-flowered large flower heads. It forms bulbs that are 3-4 cm in diam. oblong ovate with reddish-*

brown, thin-skinned, solid coats. Yellowish-green yellowish tepals blossom in late June to early July.

Study methods and materials

Study is currently being conducted on Altai onion *Allium altaicum pall*/ and Daliu Songino *Allium obliquum Pall*/ using "planting of ecotypes" method in botanical garden of Academia of Science and other fixed-sites.

Study goals

Since Mongolia has transitioned to free market economy, human relationship with nature has been imbalanced due to over consumption and over harvesting of natural resources, which leads to less and less remediation of wild onion crops each year. For this reason, we have planted new onion hybrids in botanical gardens with the purpose of collecting; assembling; securing required information on selection materials and plantation of rare species of wild onions. The following is the list of onion collections in botanical gardens around the country:

1. Collection from Sagsai soum, Bayan-Ulgii aimag
2. Bituunii am National Park, in Bogd soum, Bayankhongor aimag
3. Collection from Zuunsaikhan, Gurvan Saikhan mountain, Umnugovi aimag
4. Collection from Khuurai am, Erdenetsogt soum, Bayankhongor aimag
5. Collection from Shar Ereg ditch, Burkhan Buudai mountain, Biger soum, Govi-Altai aimag
6. Collection from Aguit Ulaa mukhar, Ikh Zakhirt Valley, Chandmani soum, Govi-Altai aimag
7. Collection from the southern mouth of Burkhan Buudai mountain, Biger soum, Govi-Altai aimag
8. Collection from Gyalalzakh, Terelj National Park, Tuv aimag
9. *Allium obliquum*- Daliu songino collection from Sagsai soum, Bayan-Ulgii aimag

Vegetation index of Altai onion collection (in percentage)

We conducted the vegetation indice */VI/* study on 8 samples of *Allium altaicum* ad 1 sample on *Allium obliquum*.

1. Sagsai collection VI from Bayan-Ulgii aimag is 30%
2. VI on Bituuni am collection from Bogd soum Bayankhongor aimag is 92.1% and
3. Yol valley collection from Gurvan Saikhan, Umnugovi aimag is 94.7%

N		Year		
		2012	2013	2014
	Collection from Sagsai soum, Bayan-Ulgii aimag	30%	30%	32%
	Bituunii am National Park, Bogd soum, Bayankhongor aimag	92.1%	93.7%	91%
	Collection from Yol Valley, Zuun Saikhan, Gurvan Saikhan Mt, Umnugovi aimag	94.7%	95%	92.1%

Collection from Khuurai am, Erdenetsogt soum, Bayankhongor aimag	99.3%	100%	95.7%
Collection from Shar Ereg ditch, Burkhan Buudai mountain, Biger soum, Govi-Altai aimag	66.6%	66.6%	60.6%
Collection from Aguit Ulaan-mukhar, Ikh Zakhirt Valley, Chandmani soum, Govi-Altai aimag	92.0%	92.7%	90.2%
Collection from the southern mouth of Burkhan Buudai mountain, Biger soum, Govi-Altai aimag	86.9%	87.5%	85%
Collection from Gyalalzakh, Terelj National Park, Tuv aimag	89.6%	87.5%	90%
Allium obliquum- Daliu songino collection from Sagsai soum, Bayan-Ulgii aimag	94.3%	94.7%	99.6%

The collection from Khuurai Valley, Erdenetsogt soum, Bayankhongor aimag showed significantly higher VI, which was 100% than the other species.

The research result of onion family Bio morphology features

In this study we did bio morphological studies to 8 *Allium altaicum* and 1 *Allium obliquum* samples. In the years of 2012-2014 the average height of the samples from the Sagsai collection, Bayan-Ulgii aimag was 30.5cm, the collection from Bituun Valley National Park, Bogd soum, Bayankhongor aimag was 33.6cm, the collection from Yol valley, Zuun Saikhan, Gurvan saikhan, Umnugovi aimag was 35.2cm , the collection from Khuurai Valley, Erdenetsogt soum, Bayankhongor aimag was 35.2cm, the collection from Shar Ereg ditch, Burkhan Buudai mountain, Biger soum, Govi-Altai aimag was 29.8cm, the collection from Aguit Ulaa mukhar, Ikh Zakhirt Valley, Chandmani soum, Govi-Altai aimag was 26.2cm, the collection from the southern pass of Burkhan Buudai mountain, Biger soum, Govi-Altai aimag was 29.8cm, the collection from Aguit Ulaa mukhar, Ikh Zakhirt Valley, Chandmani soum, Govi-Altai aimag was 29.8cm, the collection from Gyalalzakh, Terelj National Park, Tuv aimag was 31.4cm and Allium obliquum- Daliu songino collection from Sagsai soum, Bayan-Ulgii aimag was 43.8cm in length. When the length of these hybrid samples was compared to the height of the samples in the nature, our samples were taller in general.

Conclusion:

1. The collection from Khuurai Valley, Erdenetsogt soum, Bayankhongor aimag survived /Vegetation Indice/ 100% out of all 9 ecotypes that were covered in the study.

2. *Allium obliquum*- Daliu Onion from the Sagsai, Bayan-Ulgii aimag collection was 40.6cm greater whereas the collection from Yol valley in Zuun Saikhan mountain, Umnugovi aimag was 15-16 times greater in terms of venation.

References

1. Ochirbat.G , 1970. Taxonomy of Wild Plants. Ulaanbaatar
2. Ulziikhutag.N, 1989. Overview of Mongolian Wild Plants. Ulaanbaatar
3. Erdenejav.G, 2005. Economic study results and future prognosis on botanical plants.
4. Buyanchimeg.B, 2005. Report and outlook on introduction of new technology to rehabilitation of onion family using natural methods: 182-195p; 374-377p. Ulaanbaatar
5. Yunatov.A.A, 1950. Plant families of People's Republic of Mongolia: Generic Characterization. Moscow
6. Yunatov.A.A, 1968. Grassland crops and plants of People's Republic of Mongolia: 107-117p. Ulaanbaatar