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ABSTRACT: The study of ten Korean onion varieties for adaptability and yield performance test under Mongolian conditions was carried out at the Institute of Plant and Agricultural Sciences experimental field during the summer growing season from 2018-2020. 19 important characters were observed on 6 varieties and 13 hybrids, with 3 replications, such as plant height, a number of leaves per plant, length, the diameter of the bulb, average bulb weight, bulb yield per plot, bulb yield per hectare, marketable bulb yield, and biochemical content were observed in the mulched plots. The result showed that Richhong yielded the highest with 35.6 tons per hectare which are 14.7 tons per hectare more than the check, Stuttgarter Riesen from Germany.

Key words: adaptability, yield performance, onion bulb, variety, hybrid

Introduction

Mongolia meets only 50% of its domestic consumption of vegetables by its local production. In the case of onion, only 44.9% of local demand is supplied. For improving the productivity challenges and obstacles to overcome can be solved with a number of solutions as following:

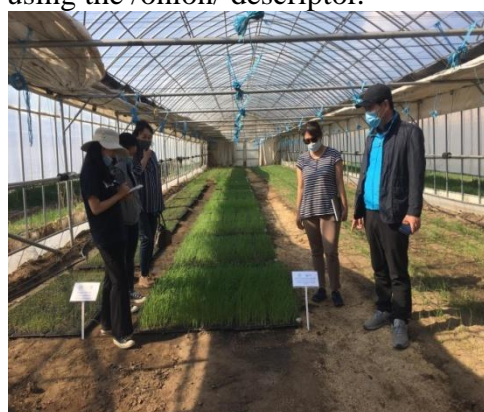
- ❖ Potential varieties with a higher yield, good quality, shorter maturity, good storage ability, and pest-resistant varieties need to be developed under local conditions.
- ❖ Improving agrotechnology and cultivation methods for bulb onions
- ❖ Dissemination of modern investment in technology and information
- ❖ Capacity building for farmers by training

Objectives

The goal of the study was to evaluate Korean onion varieties for productivity performance under Mongolian condition and demonstrate in on-farm fields for farmers.

Materials and Methods

All ten onion varieties were provided by Republic of Korea. It includes 6 variety and 13 onion hybrids. Varieties were compared to local check varieties which are originated from Germany. During the growing period the observations and data collection on plant growth and development will be carried out using the /onion/ descriptor.



Result and Discussion

- Eight weeks seedlings are transplanted to open field and survival rate was 88.4-99.0%.
- The onion seeds were germinated in 15-17 days in pots. 60 days after germination, seedlings were transplanted to open fields with black and white mulching. The transplanting rate was 95.4-100 %.
- After transplanting, the bulb initiation uniformed in 25-29 days and took 38-40 days from uniformity to maturity. Total growing days from germination to maturity was 111-123 days.
- Variety Richhon yielded 35.6 ton/ha which is 14.7 ton/ha higher than the check, Stuttgarter.
- Richhong and Shtuttgarter risen, were transplanted on both black and white mulching. Significant yield difference was observed in the black mulched field yielding 26.06-43.93 ton/ha which is 19.18-28.24 ton/ha higher than the white mulched field.
- Biochemical analysis in studied onion bulbs was highest in Aruseu hybrid/variety and Chanchon hybrid/variety resulting in 12.3-15.8 mg/% vitamin C content. Palatibility test showed Richhong hybrid had higher pungent flavor than the others.
- Printed 100 copies of Korean Onion varieties catalogue.
- Participated in the TV program, TV 9 “Local News”, broadcasted on 13th of August and acquainted about the KOPIA on- going project.
- As a result of 2019 project implementation, article “Onion varietal study and the effect of mulching on yield and quality” was published in “Present status and future prospects of vegetable production” workshop in December, 2020 in Ulaanbaatar, Mongolia.

Literature Cited

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