

SCI-CONF.COM.UA

EURASIAN SCIENTIFIC CONGRESS



**ABSTRACTS OF V INTERNATIONAL
SCIENTIFIC AND PRACTICAL CONFERENCE
MAY 17-19, 2020**

**BARCELONA
2020**

EURASIAN SCIENTIFIC CONGRESS

Abstracts of V International Scientific and Practical Conference

Barcelona, Spain

17-19 May 2020

Barcelona, Spain

2020

UDC 001.1

BBK 35

The 5th International scientific and practical conference “Eurasian scientific congress” (May 17-19, 2020) Barca Academy Publishing, Barcelona, Spain. 2020. 788 p.

ISBN 978-84-15927-31-0

The recommended citation for this publication is:

Ivanov I. Analysis of the phaunistic composition of Ukraine // Eurasian scientific congress. Abstracts of the 5th International scientific and practical conference. Barca Academy Publishing. Barcelona, Spain. 2020. Pp. 21-27. URL: <http://sci-conf.com.ua>.

Editor

Komarytskyy M.L.

Ph.D. in Economics, Associate Professor

Editorial board

Montserrat Martin-Baranera, Autonomous
University of Barcelona, Spain
Goran Kutnjak, University of Rijeka, Croatia
Janusz Lyko, Wroclaw University of Economics,
Poland
Peter Joehnk, Helmholtz - Zentrum Dresden,
Germany
Zhelio Hristozov, VUZF University, Bulgaria
Marta Somoza, University of Barcelona, Spain
Toma Sorin, University of Bucharest, Romania

Vladan Holcner, University of Defence, Czech
Republic
Miguel Navas-Fernandez, Natural Sciences
Museum of Barcelona, Spain
Aleksander Aristovnik, University of Ljubljana,
Slovenia
Efsthios Dimitriadi, Kavala Institute of
Technology, Greece
Luis M. Plaza, Universidad Complutense de
Madrid, Spain

Collection of scientific articles published is the scientific and practical publication, which contains scientific articles of students, graduate students, Candidates and Doctors of Sciences, research workers and practitioners from Europe, Ukraine, Russia and from neighbouring countries and beyond. The articles contain the study, reflecting the processes and changes in the structure of modern science. The collection of scientific articles is for students, postgraduate students, doctoral candidates, teachers, researchers, practitioners and people interested in the trends of modern science development.

e-mail: barca@sci-conf.com.ua

homepage: <http://sci-conf.com.ua>

©2020 Scientific Publishing Center “Sci-conf.com.ua” ®

©2020 Barca Academy Publishing ®

©2020 Authors of the articles

TABLE OF CONTENTS

AGRICULTURAL SCIENCES

1. *Dorokhovych V., Hrytsevich M., Bohatyrova Ye.* 15
LOW PROTEIN COOKIES DESIGNING FOR PATIENTS WITH
PHENYLKETONURIA BASED ON CORN STARCH
2. *Voitovska V. I., Tretiakova S. O., Shevchuk O. V.* 18
COMPARATIVE CHARACTERISTICS OF BIOLOGICAL
INDICATORS OF GRAIN SORGHUM (SORGHUM BICOLOR)
AND SUGAR SORGHUM (SORGHUM SACCHARATUM)
DEPENDING ON UKRAINIAN AND FOREIGN BREEDING
3. *Полутін О. О.* 26
БІОМЕТРИЧНІ ПОКАЗНИКИ ПЛОДУ РОСЛИНИ
МЕКСИКАНСЬКОГО ФІЗАЛІСУ ЗАЛЕЖНО ВІД СОРТОВИХ
ОСОБЛИВОСТЕЙ
4. *Самілик М. М., Цьомка Н. В.* 30
ЗАЛЕЖНІСТЬ ЕКОЛОГІЧНОЇ БЕЗПЕКИ РЕГІОНУ ВІД
ЕФЕКТИВНОГО ВИКОРИСТАННЯ ПРИРОДНИХ РЕСУРСІВ
5. *Стріха Л. О., Петрова О. І., Синишин М. В.* 33
ПРОБЛЕМИ ТА ПЕРСПЕКТИВИ ВИРОБНИЦТВА ВАРЕНИХ
КОВБАСНИХ ВИРОБІВ

BIOLOGICAL SCIENCES

6. *Калиниченко І. О., Колесник А. С.* 40
ДО ПРОБЛЕМИ ОЦІНКИ ПСИХОФІЗІОЛОГІЧНОГО СТАНУ
ДІТЕЙ ДОШКІЛЬНОГО ВІКУ
7. *Хоменко С. В., Хоменко О. С., Сергієнко В. М.* 44
ВЛАНШТУВАННЯ ТА ЕКСПЛУАТАЦІЯ СПОРТИВНИХ
ГАЗОНІВ

MEDICAL SCIENCES

8. *Artemov A. V., Lytvynenko M. V., Neverova O. G., Ilyina S. I., Murzin V. N.* 48
AGE-RELATED CHANGES OF THE CORNEAL ENDOTHELIUM:
A MATHEMATICAL PRINCIPLE THAT DETERMINES TISSUE
AGING AND BODY AGING
9. *Bakun O., Maikan A.* 53
POSTNATAL PERIOD WITH SPECIAL FEATURES
10. *Bakun O., Sovyak C.* 59
THE LEVEL OF SOME HORMONES IN THE BLOOD WOMEN
WITH ENDOMETRIOSIS WHICH ASSOCIATED WITH
INFERTILITY
11. *Burlaka Ie.* 64
IMPACTS OF VITAMIN D ON HEALTH AND DISEASES:
LITERATURE DATA AND OWN RESULTS

UDC 633.17(477.7)

**COMPARATIVE CHARACTERISTICS OF BIOLOGICAL INDICATORS OF
GRAIN SORGHUM (SORGHUM BICOLOR) AND SUGAR SORGHUM
(SORGHUM SACCHARATUM) DEPENDING ON UKRAINIAN AND
FOREIGN BREEDING**

Voitovska Viktoriia Ivanivna,

Candidate of Agricultural Sciences,
senior laboratory employee, Institute of Bioenergy
Crops and Sugar Beet National Academy of Agricultural
Sciences of Ukraine (IBCSB of NAAS of Ukraine),
Kyiv city, Ukraine

Tretiakova Svitlana Oleksiivna

Candidate of Agricultural Sciences, Senior Lecturer

Shevchuk Oleksandr Volodymyrovych

Student

Abstract. The main varietal of the characteristics of grain and sugar sorghum were compared and evaluated. The main differences in the qualitative indicators of the structure and productivity of grain and sugar sorghum varieties of domestic and foreign breeding are established.

Introduction. Egyptian ancient monuments, built over 2200 years BC, have been shown drawings of harvest and sorghum grains have been found, which testifies to the cultivation of this culture from time immemorial. Its antiquity is confirmed by ancient monuments in the countries of East and South Asia, so in the literature there are indications that some of its forms are of Indian origin, where cultivation was practiced for about 3000 years BC.

In China, sorghum culture was known 2000 years BC. Therefore, the origin of sorghum may be equally related to Africa, India and China, where the crop originated independently.

The increase in sorghum acreage in recent years on continents, especially in Africa, is associated with exceptional drought and heat resistance. That is why its

cultivation area covers vast territories south of the 50th parallel in the North and north of the 50th parallel in the Southern Hemisphere.

Sorghum is grown on all continents of the world for forage purposes, and in arid regions part of its grain is used for human consumption. It is estimated that sorghum grain, produced annually in Asia and Africa, is used for food during the year by more than 200 million people. Here, sorghum is the main cereal plant that is associated with the lives of millions of people, from ancient times to the present day.

Currently sorghum is grown in 85 countries. India, the USA, Argentina, Mexico, Nigeria, Sudan, China and Ethiopia occupy the largest acreage. They account for more than 90% of the gross harvest of sorghum grain. Over the last 30 years, global areas under sorghum have increased by 50%, yields - more than twice.

Like grain sorghum, sugar is capable of forming not only high yields of grain and green mass, with the possibility of using green mass on hay, haying, as well as obtaining sugar-fructose-maltose syrup as an alternative source of sugar production from sugar beet [3]. Sugar sorghum has significant competitive advantages over corn, the main of which is that much smaller sowing rates (2-3 times), high yield (2-3 slopes), environmental plasticity, the possibility of later sowing and harvesting are used [9].

That is why in the current climate change, grain and sugar sorghum is considered as an alternative to corn cultivation, because it has high productivity and a wide range of uses in food, feed and technical fields [8].

The purpose of the research is to investigate economically valuable indicators of sorghum of sugar and grain and to establish the main differences in qualitative indicators of structure and productivity of grain and sugar sorghum of varieties of domestic and foreign breeding.

Materials and methods of research. Samples of different varieties and hybrids of sorghum sugar and grain. Seeding depth of 5–7 cm, row spacing - 70 cm. During the growing season, phenological observations of plant growth and

development were performed, and collection samples were evaluated according to the relevant parameters and characteristics of these sorghum species.

All varieties of sorghum of foreign breeding are characterized by resistance to shedding, lodging, soot of bubbly and other diseases, they are cold, dry and heat resistant. Here is a brief description of varieties of sorghum of domestic breeding.

Prime sorghum grain is an ultra-early grain-grown hybrid. During the growing season a stem height of 105–115 cm is formed. The coefficient of tillering is from 2 to 3 points. High cold resistance and drought resistance, absence of tannin in the shells of grain, resistant to stress conditions, tolerant to pathogens (soot, helminth, fusarium, mold mold)

Kraievyl, grain sorghum. Originator – Institute of Grain Management of UAAS. The variety has been entered in the State Register since 2004. Yield – 3.24 t / ha, at standard level. Lying resistance – 9.0 points, drought – 8.1 points, shedding – 9.0 points. Resistance to blistering soot – 9.0 points. Broom drop – 9.0 points. Protein content – 11.0%, starch – 71.4%. Directions of use – food, feed.

Sylosne 42 sorghum sugar. Originator - Institute of Grain Management of UAAS. The variety has been entered in the State Register since 2003. The dry matter yield in the forest-steppe zone is 8.22 t / ha; seeds - 3.79 t / ha. Diseases: anthracnose - 2.5%, helminth - 10.0%. Drought resistance in the forest-steppe zone - 8.0 points; lodging - 8.5, shedding - 9.0 points. Protein content - 8.7%, fiber - 32.8%. Days to ripening in the forest-steppe zone: dry matter - 78, seeds - 124. Directions of use - silage.

Favoryt. Originator - Breeding and Genetic Institute - National Center for Seed Science and Variety Research of NAAS. The variety has been entered in the State Register since 2003. The yield in the forest-steppe zone of dry matter was 93.9 t / ha; seeds - 32,8 t / ha. Diseases: anthracnose - 2.0%, helminth - 3.3%. Resistance in the forest-steppe zone: to drought - 8.2 points, lodging - 8.6, shedding - 9.0 points. Protein content in the forest-steppe zone - 10.1%, fiber - 28.2%. Days to maturation: dry matter - 78; seeds - 124. Directions of use - silage.

Research results. In the studied varieties of domestic breeding the height of the plants was 109 - 134 cm, the length of the panicle - 15 - 17 cm (Fig. 1). Higher indexes of plant height and length of panicle 143 and 17 were in Lan 59.

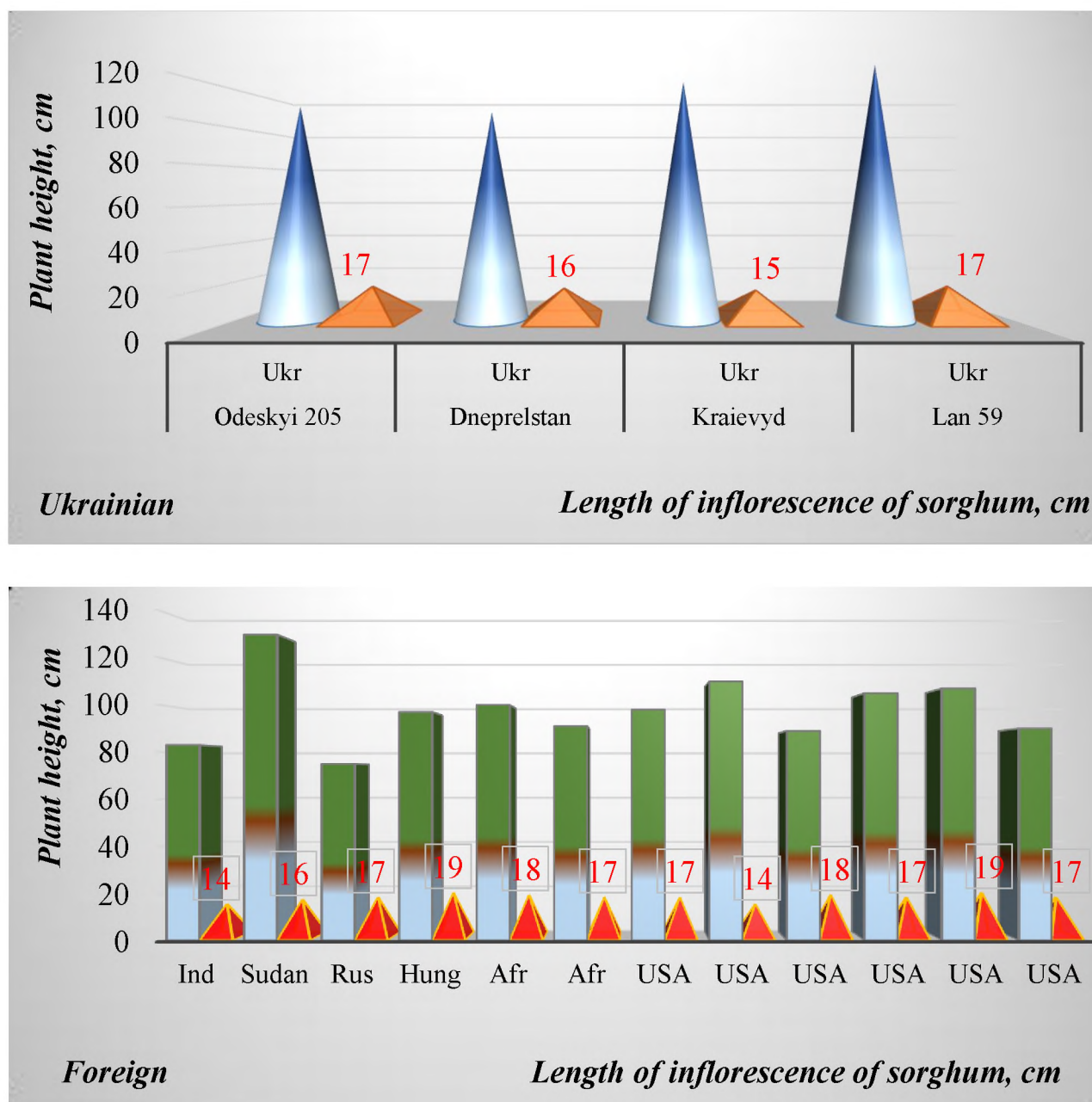


Fig. 1 Comparative characteristics of biological indicators of varieties of the grain sorghum of different breeding

The lowest in height was noted Dneprelstan variety - 109 cm. The length of the inflorescence of sorghum was the lowest in the Kraievdyd variety - 15 cm. The height

of the foreign breeding sorghum plants ranged from 75 to 130 cm, and length of the inflorescence of sorghum was 14 to 19 cm.

They were the highest in the varieties of breeding Sudan and the United States. Height of the inflorescence of sorghum varied American and Hungarian breeding. The shortest height of the inflorescence of sorghum was characterized by breeding varieties of the USA (Combine milo) and India (JS-402). The lowest height was the Russian grade Alpha - 75 cm, but the length of the inflorescence of sorghum was 17 cm.

Yield of grain sorghum depends on the main indicators of the structure and productivity of the crop. Indicators of weight of 1000 grains in varieties of domestic breeding ranged from - 24.1 - 35.9 g, with the weight of grain from one plant was - 22.5 - 45.2 g, while biological yield was formed at the level of 3.24 - 6,67 t / ha.

Among domestic breeding can be distinguished variety Dneprelstan, which is characterized by higher mass and number of grains per plant, 1000 grains and biological yield. The lowest data are in the Kraievyd variety.

Formation of higher yield of sorghum seeds is most influenced by such indicators of variety structure and productivity as: quantity and weight of grain per plant and weight of 1000 grains.

Sorghum grain variety L-318 of Sudanese breeding, formed the lowest grain weight and number of grains from one plant, respectively - 21.0 g and - 789 pieces with the lowest biological yield - 4.05 t / ha.

Other varieties of grain sorghum of African, Indian, Russian and American breeding yields were formed at a slightly higher level. The highest indices, among the studied, were characterized by the variety of American breeding Combine milo, in which the weight and number of grains from one plant were respectively - 46.7 g and 1501 pcs., The biological yield level formed at the level - 6.52 t / ha.

Formation of plant height and length of inflorescence of sugar sorghum was significantly influenced by varietal characteristics of both Ukrainian and foreign breeding (Fig. 2). The height of the plants in the varieties of sugar sorghum was in

the range of 231-245 cm with the length of the inflorescence of sorghum was 18-20 cm. of the Favorite variety.

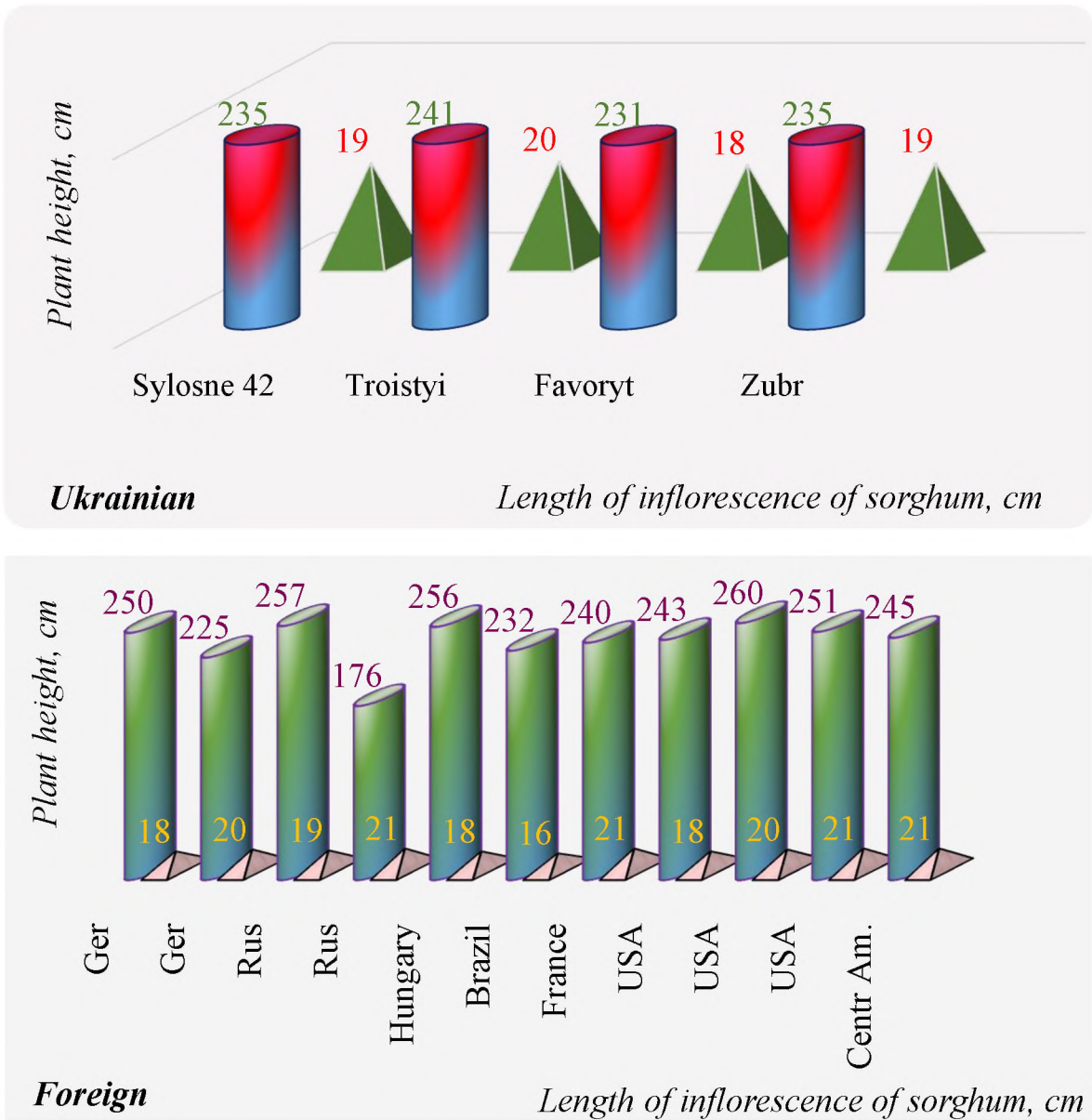


Fig. 2. Comparative characteristics of biological features of the varieties of sugar sorghum of the different breeding

The height of the sugar sorghum plants in the varieties of foreign breeding ranged from 176 to 260 cm, the length of the sorghum inflorescence ranged from 16 to 21 cm. In the varieties of American, French breeding for sorghum inflorescence -

21 cm, the plants formed the highest height at the level - 240 - 251 cm. somewhat lower - respectively relative 18 and 20 cm.

Important indicators that influence the formation of yield of the studied varieties of sugar sorghum is not only the mass and number of grains from one plant, the mass of 1000 grains, it is also the formation of dry leaf-stem mass.

In the investigated varieties of sugar sorghum of domestic selection, the mass of 1000 grains without film was in the range from 27.8 to 30.5, with the weight of the grain from one plant, which amounted to 31.6 - 34.1 g. formed at the level of 8.05 - 8.40, with 14% grain moisture 3.79 - 5.80 t / ha.

Sugar sorghum varieties of foreign breeding are characterized by higher mass and number of grains per plant and 1000 grains, which significantly affects the yield level. Thus, varieties of French, American and Central American breeding formed the mass of grain from one plant at the level of 39.0 to 43.5 g with the number of grains from one plant in the range from 1445 to 1878 pcs. These varieties formed a higher grain yield, which ranged from 5.08 to 5.95 and dry leaf-stem weight, which amounted to 9.61 - 13.48 t / ha.

The lowest biological productivity and productivity of sugar sorghum was formed by the variety of German breeding - Ald Sorghum, while they were higher than the studied variety of sugar sorghum Alfas C.J.899 American breeding.

According to the results of the study, the mass of 1000 grains in some cases less affected the formation of grain yield, if it formed a larger mass of grain with a significant number of grains from one plant in the studied varieties of sorghum of different breeding.

Thus, in the studied variety of American breeding Red Amber the weight of grain from one plant was - 36.2 g with the formation of a larger number of grains from one plant - 1878 pieces, with a smaller mass of 1000 grains - 19.6 g, but the grain yield was - 5.08, dry leaf-stem weight - 10.12 t / ha.

Conclusions. In terms of plant height, varieties of both grain and sugar sorghum of Ukrainian breeding were lower than foreign ones. The same trend was observed with the length of the inflorescence of sorghum.

All varieties of different breeding with a smaller mass of 1000 grains can produce a higher grain yield due to their greater number from one plant, which leads to a decrease in the weight of the grain from one plant and increase the yield of dry leaf-stem mass.

References

1. Devanand L. Luthria, Keshun Liu. Localization of phenolic acids and antioxidant activity in sorghum kernels. *Journal of Functional Foods* **2013**, 5 (4).
2. M. Sedghi, M.R. Ebadi, A. Golian, H. Ahmadi. Estimation and modeling true metabolizable energy of sorghum grain for poultry. *Poultry Science* **2011**, 90 (5).
3. Mamudu Halidu Badau, Israel Afam Jideani, Iro Nkama. Sugars Content of Pearl Millet as Diversed among Cultivars and Affected by Germination. *Journal of Applied Glycoscience* **2005**, 52 (4).
4. Masresha Minuye Tasie, Belay Gezahegn Gebreyes. Characterization of Nutritional, Antinutritional, and Mineral Contents of Thirty-Five Sorghum Varieties Grown in Ethiopia. *International Journal of Food Science* 2020.
5. Rakhmetov D.B. Korablova O.A., Andrushchenko O.L. etc. Catalog of plants of the department of new crops. - K.: Phytosociocenter, 2019. - 112 p.
6. Ratnavathi C.V., U.D. Chavan. Sorghum Syrup and Other by Products. **2016**.
7. Sami Althwab, Timothy P. Carr, Curtis L. Weller, Ismail M. Dweikat, Vicki Schlegel. Advances in grain sorghum and its co-products as a human health promoting dietary system. *Food Research International* **2015**.
8. Sergio O. Serna-Saldivar, Johanan Espinosa-Ramírez. Grain Structure and Grain Chemical Composition. **2019**.
9. Uchimiya Minori, Li Wang Ming. Roles of conjugated double bonds in electron-donating capacity of sorghum grains. *African Journal of Agricultural Research* **2016**, 11 (24).

CERTIFICATE

is awarded to

Tretiakova Svitlana

for being an active participant in
V International Scientific and Practical Conference

“EURASIAN SCIENTIFIC CONGRESS”

24 Hours of Participation

BARCELONA

17-19 May 2020

sci-conf.com.ua



CERTIFICATE

is awarded to

Voitovska Viktoriia

for being an active participant in
V International Scientific and Practical Conference

“EURASIAN SCIENTIFIC CONGRESS”

24 Hours of Participation

BARCELONA

17-19 May 2020

sci-conf.com.ua



CERTIFICATE

is awarded to

Shevchuk Oleksandr

for being an active participant in
V International Scientific and Practical Conference

“EURASIAN SCIENTIFIC CONGRESS”

24 Hours of Participation

BARCELONA

17-19 May 2020

sci-conf.com.ua

