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ECONOMIC EFFECT OF DRIP IRRIGATION OF COTTON IN SALINE SOILS

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ABSTRACT

This article aims to determine the economic efficiency of water-saving resource-saving technology drip irrigation method in the conditions of saline soil of Khorezm region

Key words: *Resource-efficient technology, irrigation methods, drip irrigation, irrigation rate, water saving, economic efficiency.*

Introduction

It is urgent to improve the reclamation condition of the saline soils of the Khorezm region, to prevent the process of re-salination and to obtain a high-quality crop from cotton. As water resources are decreasing year by year, the need for fresh water resources is increasing day by day. Effective and rational use of water requires wide implementation of modern innovative technologies in the field. It is urgent to ensure a high yield at a low cost using water-saving methods and technologies in the cultivation of cotton raw materials. In order to eliminate the above shortcomings and to achieve a high yield using innovative water-saving technologies, the President of the Republic of Uzbekistan dated December 27, 2018 on the creation of favorable conditions for the wide use of drip irrigation technologies in the cultivation of cotton raw materials. adopted decision No. 4087 on non-compliance measures. [1]. Drip irrigation not only prevents wastage of irrigation water compared to drip irrigation, but also increases cotton yield by 7-9%. [6]. As a result of the use of drip irrigation, it is possible to obtain a high yield with less effort and increase the level of economic efficiency. [3]. According to the results of scientific research, the amount of water supplied to the field can be saved by 20% and the yield of agricultural crops can be increased by 25% by using drip irrigation [5].

The use of drip irrigation method allows economical and efficient use of water, increases the productivity of agricultural crops, allows to mix mineral fertilizers and developmental substances, herbicides with water, and increases the cotton yield by an additional 4-5 100kg/he. crops are grown. [2]. Due to the systematic introduction of drip irrigation, 1978 m3/ha of water was used less per hectare compared to the above-ground irrigation method, water consumption was saved by 43.0%, cotton yield was 3.35 100kg/he or 8.3% [4]. In the current Khorezm region, the main method is irrigation of cotton (over the ground). The technology of cotton in this way, along with excessive water consumption, manpower, and material costs, cannot ensure water distribution in the irrigated fields and uniform moistening of the soil layer where the root system is located, and it leads to uneven development of plants in the field. In the current water shortage, we have introduced water-saving technologies during the growing season of cotton, and we have aimed to use drip irrigation technology in order to obtain abundant and high-quality crops at low cost.

In order to study the effectiveness of drip irrigation technology, field experiments on drip irrigation technology were carried out on 4 hectares of cotton (over the ground) and 10 hectares of the "Diorbek Jumanyozov" farm in Khanka district. was carried out. The field of the experiment was carried out in the

the conditions of heavy sand, the depth of underground seepage water level is 0.85-0.90 cm, medium salinity soil, which has been planted and irrigated for a long time. Khorezm-127 cotton seeds were planted in both experimental fields in a 60x20-1 cm scheme. The experiment was carried out in 2 variants with 3 returns. All calculations, observations and analyzes were carried out on the basis of the 2007 "Methods of Conducting Field Experiments" adopted at UzPITI. Before irrigation, the soil moisture indicator was determined with a tensiometer device, and irrigation was carried out by determining the irrigation periods and standards. The level of groundwater was monitored based on the data obtained from existing wells. Irrigation started at the same time in both experimental fields. The number of irrigations on the surface irrigated area is 5 times, the interval between irrigations is 15, 15, 13, 18 days, 4600 m3/he per hectare, 12 times per irrigation. the volume was 218.6 m3/he and 2622 m3/he in the season, the irrigation interval was 6;6;6;8;5;6;6;7;6;7;6 days. According to the results of the conducted experiments, the yield per hectare was determined according to the options.

Table N-1

Experimental method	Average number of seedlings per hectare (thousands)	Average number of pods in 1 bush (pieces)	Average weight of one bag (g)	Hosildorlik (ts/ga)	Additional yield obtained ±100kg/he
Irrigation over the ground	71,3	11,5	4,5	37,0	0
Drip irrigation	73,5	11,9	4,6	40,35	+3,35
	2,2	0,4	0,1	3,35	

As can be seen from the data of Table 1, the number of seedlings in drip irrigation is 2.2 thousand more, the number of pods is 0.4, the weight of the seedling is 0, per 1 gram, the maximum yield was more than 3.35 t/ha. Economic indicators were analyzed by comparing the costs incurred and the income received in the options for determining the economic efficiency.

Table N-2

Economic indicators of raw cotton grown in the experimental field. (per 1 hectare)

Options	Area (ha)	Gross yield (t)	Cotton raw material price (thousand UZS)	Costs spent on agrotechnical experiments (thousand UZS)		Electricity (thousand UZS)	Total costs
				until watering	after watering		
1	2	3	4	5	6	7	8
Egatlab (overland irrigation)	4	14,8	137122000	1750000	1030000	385990	3165990
Drip irrigation	10	40,3	337379000	1750000	-	209088	1206902

From our data in Table N-2, it is clear that the same 1750000 UZS were spent to irrigate 1 hectare of field area in both options. 1,030,000 UZS were spent on harvesting, watering, weeding, and 385,990 UZS were spent per hectare, totaling 3,165,990 UZS. In the case of drip irrigation, 1,750,000 UZS were spent on agrotechnical activities before irrigation. Due to the lack of cultivation between the rows, 209,088 UZS per hectare were spent during the irrigation period, and 385,990 UZS of electricity were spent during irrigation, and 176,902 UZS of electricity were saved. In total, 1206902 UZS were spent on drip irrigation of 3165990 UZS per hectare of surface irrigated area, and 1959088 UZS were less spent on drip irrigation method. Based on the above, wise use of water resources in the drip-irrigated option,

despite the reduction of agrotechnical processes, cotton grows at the same rate and provides abundant harvest, reducing the consumption of material and material resources, saving 43% per hectare. 176,902 UZS of total expenses were saved, 1,959,088 UZS were saved from electricity, and 310,210 UZS more income was made due to the additional harvest, and the cost of cultivated products decreased.

References.

1. Decision No. 4087 of the President of the Republic of Uzbekistan dated December 27, 2018 "On urgent measures to create favorable conditions for the widespread use of drip irrigation technologies in the cultivation of cotton raw materials".
2. G. Bezborodov, B. Komilov, M. Esonboyev Drip irrigation: convenient, cheap, effective. Agriculture of Uzbekistan 2008. N°3. 7b.
3. A. Botirov, H. Abdumutalipova, Y. Sattiyev, R. Zakirov Advantages and prospects of drip irrigation. Agro science-Uzbekistan agriculture N°6.2019.77-78b.
4. Kamil Durdiyev, associate professor of science and technology. Matyokubov is a teacher. UrDU. Prospects of drip irrigation of cotton in saline soils of Khorezm region. Agriculture and water management of Uzbekistan No. 2. 2023.
5. Rahimboyev F.M. Khamidov M.Kh. "Agricultural melioration" Tashkent. Labor. 1996-328b.
6. V. Serikboyev. Technologies that save water resources in cotton. Agro Uzbekistan Agriculture and Water Management No. 5.2019. Pages 75-76.
7. UzPITI "Methods of conducting field experiments" 2007.

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EFFECT OF FERTILIZER RATE ON YIELD ELEMENTS OF SUNFLOWER VARIETIES "DILBAR" AND "OSIYO"

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ABSTRACT

In this scientific article, the influence of different rates of fertilization on the yield elements of sunflower varieties "Dilbar" and "Asiyo" in Khorezm region, which is the northern regions of Uzbekistan, was studied. Information on choosing the most optimal options for using mineral fertilizers in "Dilbar" and "Asiyo" sunflower varieties is given.

Key words: *Khorezm, sunflower, dilbar, Asia, fertilizer, fertilizer standard, harvest.*

Relevance of the Topic

In the years of independence, in order to increase the welfare of the people in our country, special attention is paid to the creation of new varieties and the expansion of cultivated areas in order to increase the number of food crops, including the vegetable oil obtained from them. The possibility of producing 25-50 quintals of harvest from each hectare of sunflower fields and 500-550 kilograms of oil from one ton of sunflower seeds helps to increase the economic efficiency of farms. The most important thing is that the expansion of sunflower fields and the increase of products made from it in our country will save a large amount of foreign currency, satisfy the population's need for oil products more fully, as well as the consistent development of animal husbandry. The main way to get a high profit from sunflower is to grow quick ripening varieties of this crop as a repeat crop in the summer. The development of a new modern cultivation technology that ensures a higher and higher quality sunflower crop is one of the urgent issues of today. [3].

Scientific Research Method

Field experiments were carried out on the basis of UzPITI "Methods of conducting field experiments" method (2007) and the recommendations of the experimental station of oil and fiber crops of Uzbekistan were used. The accuracy and reliability of the obtained data were analyzed mathematically and statistically using the multidisciplinary "dispersion analysis" method of B.A. Dospehov. [1].

Research Results

The middle part of the sunflower basket is not well supplied with nutrients, therefore, regardless of the feeding conditions, more or less of the tubular flowers do not fertilize, pollinate and remain sterile.Flowering starts from the edge of the basket and goes to the middle. Reproductive organs of sunflower begin to form very early. From 18-20 days after germination, it begins to grow rapidly upwards. In the phase of the formation of the seventh-eighth pair of leaves, flower buds are formed. At

this time, flower baskets can be kept full. In this phase, the demand of sunflower for mineral substances, moisture and light is very high. If there are shortages and inconveniences during basket making, the baskets will certainly be small. The budding phase begins 35-40 days after germination. At this time, the size of the stem and the size of the leaf are equal. During flowering, the growth of the stem slows down and the baskets begin to fill. When the harvest begins to ripen, the weight of the basket is equal to half of the total size of the sunflower. [4]. Indicators of yield elements in Dilbar and Asian varieties are presented in Table 1. After the harvest basket ripens, a sample is cut from the plants and brought to the laboratory, and its weight, diameter, number and weight of seeds in it, and the weight of the empty basket are determined.

In the "Dilbar" variety of sunflower, the circle diameter of the harvest basket was 52.3 cm wide in the non-fertilizer variant, while it was 52.0 cm in the N150P150K200 variant, which is 0.3 cm smaller than the non-fertilizer variant. it happened. It was found that the third option used in the N200P150K200 standard has a width of 58.5 cm and a basket with a larger diameter by 6.2 cm compared to the first option. In the fourth option, N250P150K200 is used, it is 63.3 cm wide, creating a basket with a larger diameter by 11.0 cm compared to the first option, by 10.6 cm compared to the second option, and by 4.8 cm compared to the third option was determined. The width of the basket was 18.0 cm when N200P150K200 kg of nitrogen, phosphorus and potassium was applied per hectare, and 19.8 cm when N250P150K200 kg was used. The largest baskets were observed in these variants. The total weight of the harvested basket with seeds is 120.8 grams in the non-fertilizer option, 122.0 grams in the N150P150K200 option, in the third option using the N200P150K200 standard, the weight of the basket is 129.5 grams in the fourth option using the N250P150K200 standard. weight was observed to be 139.3 heavy.

In the "Asia" variety of sunflower, the circle diameter of the harvest basket was 41.3 cm wide in the non-fertilizer variant, while it was 42.1 cm in the N150P150K200 variant, which is 0.8 cm smaller than the non-fertilizer variant. it happened. It was found that the third option used in the N200P150K200 standard is 42.7 cm wide, and a basket with a larger diameter is formed by 1.4 cm compared to the first option. In the fourth option, N250P150K200 is used, it is 48.5 cm wide, and it is 7.2 cm larger than the first option, 6.4 cm larger than the second option, and 5.8 cm larger than the third option. was determined.

When the width of the harvest baskets was measured from the front side, it was found that it was 13.6 cm in the variant without fertilizer, which was narrower than all the variants with fertilizer in the experiment. The width of the basket was 14.4 cm when N200P150K200 kg of nitrogen, phosphorus and potassium was applied per hectare, and 15.0 cm when N250P150K200 kg was used, and the largest baskets were observed in these options.

The total weight of the harvested basket with seeds is 110.8 grams in the non-fertilizer option, 112.0 grams in the N150P150K200 option, in the third option using the N200P150K200 standard, the weight of the basket is 119.5 grams in the fourth option using the N250P150K200 standard. weight was observed to be 129.3 heavy.

After determining the total weight of the harvest basket, the seeds in the baskets were squeezed and their number was determined. In this case, it was found that the number of harvested seeds in the basket was 1141.5 in the "Dilbar" variety in the control option without fertilizer, and of course, the seedless, non-pollinated pistachios in the middle of the basket were not taken into account, only pistachios with whole

kernels were taken into account. In the third variant used in the N200P150K200 standard, the seeds in the basket were 44.3 more than the non-fertilized version, and it was found that this indicator increases as the fertilization standard increases. In the fourth option used in the N250P150K200 standard, it was found that the seeds in the basket produce 136.3 more seeds.

In the "Asia" variety, the number of harvested seeds in the basket in the control option without fertilizer was 1041.5, in the second option using the N150P150K200 ratio, the number of seeds in the basket was 1052.4, in the third option using the N200P150K200 ratio, the number of seeds in the basket was It was found that 1085.6 seeds, in the fourth option used in the N250P150K200 standard, the number of seeds in the basket is 1177.9 seeds.

Table 1 Effect of fertilization rate on yield elements of sunflower varieties "Dilbar" and "Asiyo".

options	Fertilization rate, kg/ha	Character of the basket			the number of seeds in the harvest basket, pcs	weight of seeds in the harvest basket, grams	whole grains in the basket %
		diameter, cm	width, cm	total weight, grams			
Dilbar variety							
1	Without fertilizer	52.3	15.6	120,8	1141,5	78,5	13,0
2	$N_{150}P_{150}K_{200}$	52,0	16,0	122,0	1152,4	80,0	12,6
3	$N_{200}P_{150}K_{200}$	58.5	18.0	129,5	1185,8	82,8	12,5
4	$N_{250}P_{150}K_{200}$	63.3	19,8	139,3	1277,8	101,8	12,3
Osiyo variety							
1	Without fertilizer	41.3	13.6	110,8	1041,4	68,5	13,5
2	$N_{150}P_{150}K_{200}$	42,1	14,0	112,0	1052,4	70,0	12,8
3	$N_{200}P_{150}K_{200}$	42.7	14.4	119,5	1085,6	72,8	12,4
4	$N_{250}P_{150}K_{200}$	48.5	15,0	129,3	1177,9	81,8	12,0

After determining the number of seeds in the harvest basket, their weight was determined. It was determined that the weight of 1141.5 seeds in a basket in the "Dilbar" variety without fertilizer was 78.5 grams, and in the N150P150K200 variant, the weight of 1152.4 seeds in a basket was 80.0 grams. , it was found that the seeds in the basket of the N200P150K200 fertilizer variant were 1185.8 pieces and weighed 82.8 grams, and the seeds in the basket of the N250P150K200 variant were 1277.8 pieces and the weight was 101.8 grams.

In the "Asia" variety, the weight of 1041.4 seeds in a basket without fertilizer was determined to be 68.5 grams, and in the N150P150K200 variant, the weight of 1052.4 seeds in a basket was determined to be 70.0 grams. , it was determined that the seeds in the basket of the N200P150K200 fertilizer variant were

1177.9 pieces and the weight was 81.8 grams.

The weight of empty baskets was determined by weighing the "Dilbar" variety. The weight of an empty basket is 30.6 grams without fertilizer, 48.5 grams when using N150P150K200 kg, 38.2 grams when using N200P150K200 kg, 45.6 when the amount of nitrogen is increased to N250P150K200 kg observed. The weight of the "Asia" variety was determined by weighing the empty baskets. The weight of an empty basket is 28.6 grams without fertilizer, 35.4 grams when using N150P150K200 kg, 36.3 grams when using N200P150K200 kg, and 39.3 when the amount of nitrogen is increased to N250P150K200 kg observed. It was observed that the number of empty grains in the basket was 13.0% in the "Dilbar" variant without fertilizer, 12.6% in the N150P150K200 variant, 12.5% when N200P150K200 kg was used, and 12.3% when the amount of nitrogen was increased to N250P150K200 kg. It was found that in the case where no fertilizer was used at all, there was a large number of empty seeds in the middle of the basket. It was observed that it was 13.5% in the "Osiyo" variety without fertilizer, 12.8% in the N150P150K200 version, 12.4% when N200P150K200 kg was used, and 12.0% when the amount of nitrogen was increased to N250P150K200 kg. Even in this variety, in the case where no fertilizer was used, it was observed that there was a large number of empty seeds in the middle part of the basket.

Summary

We applied the norm of mineral fertilizers to promising sunflower varieties "Dilbar" and "Asiyo" in 4 options. When the most optimal option was used in the amount of N250P150K200, the baskets were large, the number of seeds in it was large, and the weight of the seeds was heavy. It was observed that empty grains in the basket were the least 12.3% in the "Dilbar" variety, and 12.0% in the "Asia" variety. In the non-fertilizer version, the crop had the opposite effect on the elements, resulting in small baskets and a small number of seeds. Compared to the promising "Dilbar" variety of sunflower, the baskets are larger, the number of seeds in it is larger, the weight of the seeds is heavier and the yield is higher.

References

1. Methods of conducting field experiments. Editorial board Sh. Nurmatov and others / UzPITI, 2007.T. 57 b
2. Dospexov B.A. Metodika polevogo opita. – M.: Kolos, 1985. – 317 s.
3. Yormatova D., Xushvaqtova X.S. //Moyli ekinlar. Zarafshon. 2008.-8-9 b
4. Yormatova D // O'simlishunoslik. Toshkent. 2000. - 171 b. 6.
5. . http://semena.uz/uz/informat - Takroriy kungaboqar yetishtirish agrotexnikasi
6. http://www.agro.uz/uz/agric - Azizov T.,Anorbayev I. – Kungaboqar bebaho takroriy ekin.
7. http://semena.uz/uz/informat - takroriy kungaboqar yetishtirish agrotexnikasi

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ANALYZING THE PROBLEM OF MENTAL HEALTH OF THE SEAFARER WORKERS AND ITS IMPACT ON OCCUPATIONAL HEALTH

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ABSTRACT

It is often believed that seafarers are exposed to both physical and psychological hazards on the job. Nonetheless, unlike physical health, the mental health of marines has received less attention. There is a paucity of systematic, in-depth analyses of the causes and contributing factors of mental health issues. Ninety-six percent of respondents ranked mental health as either very or very essential to their overall health. Sailors believe that COVID-19 has had a significant negative influence on their mental health. There is both a theoretical and practical component to this subject. Some of the theoretical work has focused on determining the prevalence of depression among mariners, its causes, and effective treatments. First aid was the primary treatment for sailors' injuries, while medicine was used for diseases. Findings from this study's third and final section attempt to provide answers to the questions addressed in the study's introduction, including how to combat depression aboard ships and lower the suicide rate among marines.

Keywords: *Work Environment, Pandemic, Mental Health, Seafaring and Problems*

INTRODUCTION

KVH Video Tel and ISWAN have collaborated to provide a free training package titled Seafarers' Mental Health and Wellbeing. Unlike on land, seafarers are less likely to have access to stress-relieving activities over the course of their workday. The goal of Seafarers' Mental Health and Wellbeing is to highlight the constructive actions that seafarers may take to improve their own and their crewmates' resilience in the face of adversity at sea. The training package may be utilized for both solo study and group instruction both at sea and on land. In addition to our Good Mental Health Guides, the package also includes a 23-minute film to be seen before and during training sessions aboard ships. It is often believed that seafarers are exposed to both physical and psychological hazards on the job. Heat, cold, noise, vibration, multiculturalism, multinationalism, social isolation, loneliness, separation from loved ones, piracy, and crime on board are all potential health risks. Work for seafarers often entails a hierarchical organisation, shift work, and a lack of clearly defined work and rest periods.

The stress, sadness, burnout, and, in the worst instances, suicidal thoughts that some seafarers experience as a result of the mental and physical strains of their jobs are well-documented. In a similar vein, researchers found that 5.9% of mariners died by their own hand between the years 1960 and 2009. Care for sailors' mental health should be a top priority. When compared to physical health, attention to seafarers' mental health has been lacking. Only three recent review studies have examined the mental health of maritime workers. In the frst investigation, researchers found that only 10.61% of all studies focused on psychological functioning and different elements of mental health among marine employees. The second study found that rates of suicide and disappearance at sea among sailors (who are often

incorrectly presumed to have committed suicide) were useful indicators of mental health. Personal variables and the maritime work environment may have contributed to incidents of missing at sea, but they were not included in the research that used an association or causal link study design. Even though research on depression and suicide among mariners is limited, the most recent one has focused on the increased risk of these conditions due to stress and isolation. This suggests that there is a shortage of both scoping studies and systematic, complete reviews in the domain of mental health among seafarers. In 2012, the United Kingdom and Australia initiated an important mental health initiative with the aim of enhancing the health and happiness of the maritime workforce. Although seafarers' working circumstances are physically and socially hazardous, studies focused on well-being or psychological elements of health have not been undertaken to the same extent as research concerned physical health. This scoping study, which attempted to carefully map the data pertaining to mental health difficulties and their associated determinants, was conducted with the goal of clarifying useful treatments to these problems for seafarers.

LITERARTURE REVIEW

Agnieszka Rzepka et al (2021) This book offers helpful guidance for navigating the ever-changing IT landscape that characterizes today's corporate operations. Using the innovative concept of teal organisations as its foundation, this book demonstrates the usefulness of advocating for a flat organizational structure in which positions are not fixed in advance and where roles come with clear accountability that are continually defined in accordance with current needs. Frederic Laloux popularized the concept of a "teal organisations," which is a new approach to leading businesses. As Laloux explains, it makes everyone a leader. Its basic tenet is that a more spiritual and meaningful work environment will emerge as a consequence of employees' increased agency. This book, based on the authors' study in six different nations, looks at how the teal idea has been applied in various areas of the globe and how self-management and entrepreneurial culture have changed in the era of Economy 4.0. Across six nations, the authors collected data for their study. We look at common misunderstandings of this innovative method, as well as the real-world challenges of putting it into practice in the present climate of unpredictability.

Hemming (2020) The project employed a mixed-methods strategy, including four interconnected studies. Participants in Study 1 filled out a cross-sectional online survey (Study 1) that assessed demographic and long-term care (LTC) factors, as well as activation, self-efficacy, and quality of life and wellbeing (QoL). This research collected data from 736 workers across many industries, including those dealing with mental health, MSK, and other LTCs. Quantitative techniques (analysis of covariance, t-tests, chi-square tests, regression, and multi-level modelling) were utilized for the survey and online diary, whereas qualitative techniques were employed for the in-depth interviews (content, thematic, narrative thematic and narrative structural analyses). The results of this research support the idea that giving workers greater leeway, autonomy, and transparency in their workplaces is advantageous. There is a wide range of psychological and social factors that might affect an employee's ability to self-manage. Although managers and executives may not realise the impact, they have on their workers' ability to self-manage their LTC, they do have a role to play and may benefit from guidance on how to do it effectively. In this research, we highlighted the needs for workplace assistance and developed a paradigm for self-management of psychosocial LTC.

Gill Hasson (2020) Companies have struggled to provide for their employees' emotional and psychological well-being despite recent efforts and advancements. If you or a coworker are struggling with mental health issues, go no further than Mental Health & Wellbeing in the Workplace for guidance. This comprehensive manual on employee and supervisory mental health and wellbeing is a valuable resource for any business. Gill Hasson and Donna Butler explore the ways in which organisations might improve their workers' mental health, as well as the evolving perspectives of both employers and employees in this area. Studies and surveys may help with a broad variety of problems that may occur from the perspectives of both employers and employees.

Arkaprabha Sau (2019) Many sailors suffer from anxiety and depression. Thus, it is crucial to their health to undergo routine testing for anxiety and sadness. Utilizing an automated screening technique, it is feasible to use machine learning technology to quickly identify at-risk mariners who might benefit from mental counselling and treatment. Using machine learning techniques to examine mariners for signs of depression and anxiety. The research was conducted with the proper permissions and ethical clearances at the Haldia Dock Complex in India, where 470 sailors were interviewed. For this study, researchers collected information on a variety of topics, including demographics, profession, and health. The Hospital Anxiety and Depression Scale was then used to assess the levels of anxiety and depression. CatBoost, Logistic Regression, Naive Bayes, Random Forest, and Support Vector Machine were the five machine learning classification models analysed in this Python study (SVM). In this context, CatBoost was shown to have an accuracy and precision of 82.6% and 84.1%, respectively. The focus of this study is on the use of machine learning techniques to the automatic detection of mental diseases.

Joanne McVeigh et al (2019) One example of secondary data collection is a survey taken by a multinational maritime company of its crew members to learn more about their perspectives on the work. Structural equation modelling was used to examine the relationship between a theoretical model of subjective stress and job satisfaction in a population of merchant mariners. Although the model had satisfactory results for goodness-of-fit statistics, it performed poorly on the Tucker-Lewis index and the comparative fit index. Dispositional resilience was shown to have a significant relationship with the criterion variable of perceived stress, with the model explaining 23.8% of the variance in this variable's value. Job satisfaction was the criterion variable, and instrumental work support was the most predictive factor, explaining 70.6% of the variance. It shows that instrumental work support is an important component in connection with job satisfaction, whereas dispositional resilience may be especially important when addressing the mental health of merchant seafarers. However, the mental health and well-being of seafarers depends on their working in an atmosphere that is helpful, equitable, and fair.

FACTORSINFLUENCINGDEPRESSIONONBOARD

A depressive episode often begins when a person experiences a significant life change. These shifts might first manifest as occurrences but eventually converge on underlying reasons. Every day, we are exposed to new experiences, some of which will have a greater impact on us than others. Here we'll look at some of the factors that might lead to depressive thoughts and feelings:

Environmental Factors

The circumstances of our lives, including the nature of our jobs and the social and environmental pressures we confront, might contribute to depressive episodes. Potential environmental contributors to

depression include, for instance:

Fatigue: Fatigue is defined as "a decline in physical and/or mental state, resulting from physical stress" in the International Maritime Organization's (IMO) rules. Power, speed, response time, coordination, decision making, and/or mental stability might all be negatively affected There are numerous potential causes of fatigue, but some of the most apparent include lengthy workdays, an inadequate crew, and a workload that exceeds the capabilities of the available staff. On top of that, we'll go through some of the ship's other potential fatigue-in.

• Subordinate crew members lacked the necessary skills.
• The unpredictable schedules and long hours that are part of everyday life at sea may cause exhaustion, which in turn increases the likelihood of mishaps of a psychological or emotional kind.
• Longer trips, particularly at night, have been shown to be more stressful.

Non-officers, especially younger ones, and senior sailors, in particular, face more fatigue-related risks than their officer counterparts. According to research published by the International Transport Federation (ITF) titled "Seafarer fatigue: Wake up to the hazards," the average number of hours spent working worldwide is shockingly high. Twenty-five percent of the ITF survey population reported working more than 80 hours per week on average. In many cases, sailors reported feeling tired right when they woke up, a feeling that only becomes worse during the course of the shift and becomes more noticeable after the first week at sea. The quality of life on board is being deteriorated, and the health and safety of the crew is being put at risk. It's possible that these many causes will anxiety and melancholy among mariners. Intense physical exertion, both isometric and dynamic, along with the stress of working in high temperatures, may be a critical component in the development of a cardiac arrhythmia. At the very least, objective demands, subjective stress, and reported health concerns should all be taken into account when designing fatigue-related metrics. In a cross-sectional study of sailors across two nations researchers found that mental health issues such as depression and sexual dysfunction are strongly linked to prolonged periods of work-related stress.

Limited Recreation Activity: Even though there are a variety of forms of entertainment that may help seafarers unwind and relax, their limited free time means they seldom engage in the forms of entertainment and sport that might help them unwind and cope with the stresses of life at sea. Depression risk has been linked to a lack of recreational activity, according to a number of studies. Emotions, according to studies, may have positive or negative consequences on your mental health. Some seafarers are more susceptible to depression since they don't have enough opportunities to relax and have fun while at sea.

Loneliness: When you choose to be a seafarer, you're agreeing to take on the challenges and rewards of that lifestyle. Since they might remain at sea for weeks or months at a time before making port, sailors have one of the lowest rates of social interaction of any occupation. The number of Western merchant mariners has been declining in recent decades, in large part due to the widespread recognition that social isolation is a key contributor to the development of psychiatric issues among mariners. Isolation has been linked to feelings of hopelessness, sadness, and even suicidal ideation in certain susceptible people. Being away from loved ones for extended periods of time may sometimes bring on feelings of isolation. Seafarers often cite homesickness as a major demotivator. According to a survey of 134 sailors, "extended absence from family" is the top source of anxiety at sea for 59.7 percent of respondents. When some of our loved ones are ill or when we are able to make touch with those at home, our stress levels rise noticeably.

Sleep Deprivation: A good night's sleep may do wonders for your mental health. Lack of quality sleep may have far-reaching effects on a person's vigour, drive, and mental state. Possibly mild sleep loss over a long period of time may have negative effects on mood and even reveal severe depression. prolonged feelings of sadness or emptiness It has been shown that persons who suffer from insomnia are more prone to feelings of despair and worry than those who sleep well. They have a 10-fold increased risk of developing major depression and a 17-fold increased risk of developing severe anxiety. Depression risk increases as does the frequency with which one's depressive symptoms keep them up at night.

Multiculturalism and Nationalism: While it is more usual for ships to employ a diverse range of nationalities and languages in their crew, little is known about how this may affect mental health on ships' personnel. According to the findings of one research, "cross-cultural communication on board tends to be more effective in terms of interaction and results when seafarers are culturally near, and less successful when they are culturally far from one other." The inability to interact and form bonds amongst crew members is a significant source of tension aboard ships. Distinctions in Maritime English pronunciation and use are strong indicators of cultural remoteness. The "cultural adjustment stage" is when a sailor could feel "mental pressure and psychological restriction" from not understanding the cultural limits with his or her crewmates, such as the fact that speaking one's home tongue might arouse suspicion among non-speakers of that language

Medical Examination and Health Assessments

Employers in the maritime industry, like those in any other sector, often need prospective crew members to pass a medical screening before they are allowed to join a ship (PEMEs). These tests determine whether or not a sailor is fit for duty. If they pass the physical, they will get a medical clearance that will allow them to operate aboard the vessel. Before signing a contract for a journey, all sailors must do this. The problem is that these Exams tend to concentrate on the employee's physical health, and as a result, mental health issues like depression may go undetected. While the PEME has a lot going for it, it is not designed to identify mental health problems like depression or suicidal ideation due to the inherent conflict of interest between seafarers and their employers. This is because companies like to have healthy and fit crewmembers on board, while crewmembers themselves are interested in finding work regardless of their physical condition.

Gender

It is often held that males predominate in maritime occupations, and statistics bear this out: only 1%-2% of the world's entire seafaring population is female. Anxiety, stress, and depression are, after back/joint pain, the most often reported health conditions among female seafarers, according to a survey conducted by the women's health and welfare organisations. Women sailors face double the effort and double the scrutiny required to earn the same respect as their male counterparts in an industry where women make up just a small percentage of the workforce. Employers that are biased against women who believe it's best for crew morale not to have women aboard because it can produce sexual tension and jealousy have a negative impact on women's ability to obtain and keep employment in the maritime industry.

Deep-Sea and Social Isolation

The longer you are at sea, the more cut off from loved ones you become, and loneliness is a common theme on deep sea cruises. "Seafarers in deep sea trading ships are often at sea continuously for weeks or

months and can be exposed to isolated social and working conditions, made worse by recent reductions in ship crewing numbers, as well as long term separation from family," write Roberts and Marlow to explain why 87% of suicides between 1967 and 2002 occurred on deep sea ships. Isolation from others is not a disease but rather a fact of life that may have serious consequences for mariners. In the rigorous social environment of the sea, close friendships, emotional, and intimate exchanges are quite rare. Those higher in the hierarchy or in authoritative positions feel the need to keep their distance. The crew of a deep-sea vessel sometimes spends months away from home and has few chances to keep in touch with friends and family, all of which may add to a sense of isolation. Although recent developments in technology have helped to lessen the impact of social isolation, most ships on the high seas, with the exception of passenger ships, still lack access to reliable internet.

COVID 19 And Its Effecton Seafarers

The unique corona virus illness caused a global shutdown owing to its high infection and mortality rates. This illness struck persons of all socioeconomic backgrounds and cultural backgrounds, as well as all professions. Not only did this epidemic cause bodily harm, but it also caused some individuals to become mentally unstable. Anxiety and sadness were more common among sailors during the corona virus epidemic since most of them were stuck aboard boats and unable to return home; this was made worse by travel restrictions. As a result, several sailors were forced to stay on the job for longer than expected. Antonio Guterres, the UN SecretaryGeneral, called the plight of the mariners "a humanitarian and safety issue" (Webster, December 13,2020).

The risk of injury and sickness on a ship is far higher than in a land-based job, so it's no surprise that workers might experience the same symptoms of depression that affect those in other fields. Recently, marine benefits conducted a study and discovered that 72% of respondents experienced a delay in crew change as a result of the pandemic, with 69% reporting a delay of up to 4 months and 5% reporting a delay of 8-10 months. Most individuals, particularly mariners, have experienced the difficulty of being separated from loved ones for extended periods of time in the midst of a pandemic. This is the world in 2020, and the mental health of seafarers has been severely impacted, just as in other fields.

SIGNS AND SYMPTOMS OF DEPRESSION

The common symptoms of depression include a lack of interest in once-enjoyed activities, an inability to sleep, and an overall sense of worthlessness or hopelessness. These are only a few of the symptoms of depression, but there are many more that people may not be aware of. Some may attribute this to the stigma around mental illness, while others may attribute it to a lack of interest. Some individuals experience depression without understanding the source of their emotions, and this may carry on for a while before they decide to get treatment. It's important to remember that prompt treatment may save a life if these signs are recognized early on. Here are some of the most typical warning indicators.

- Having trouble dropping off to sleep.
- They gave out a tense and angry vibe.
- Lack of focus, forgetfulness, confusion, and indecision.
- Self-loathing and remorse are the results.
- struggling to strike a balance between job and personal life
- Irritability and worry that won't go away
- Very reactive, therefore they find themselves in a lot of disagreements and conflicts.

• Doesn't like being around other people, therefore they start isolating themselves and eventually giving up.
• Suicidal ideation, including occasional verbalization of such ideas.
• depleted of vitality and quick to anger.
• Lack of energy, both mentally and physically
• Misuse of drugs or alcohol
• Hopelessness and helplessness
• Disinterest in formerly enjoyable activities.
• Alterations in either hunger or body mass. To cope with their feelings of depression, some individuals choose to overeat, while others choose to lose their appetite.
• Low self-esteem and a pervasive feeling of worthlessness are a warning indication that should not be ignored since they may lead to suicidal ideation if not addressed.

Symptom recognition is a crucial first step in receiving treatment for this condition. The preceding symptoms are not required for a person suffering from depression to seek medical care. Experiencing more than a few of these symptoms is cause to seek assistance.

MEASURES TAKEN TOWARDS THE FIGHT OF DEPRESSION

A primary focus from the first, depression has been and will continue to be an area of study for as long as it exists. The International Maritime Organization (IMO), the Finnish government, and a wide range of international organisations, such as the International Seafarers' Welfare Association (ISWAN), Shipowners, and so on, are all invested in the issue of crew members' mental health and well-being at sea.

International Seafarers' Welfare and Assistance Network (ISWAN)

Shortly addressing the various risks, recommendations, and potential remedies for crew members, ship operation personnel, and policy makers or executives, the International Seafarers' Welfare and Assistance Network (ISWAN) has released Guidelines for Mental Care Onboard Merchant Ships as part of the Seafarer's Health Information Program (SHIP). Since day one, many efforts had been done, and now their contribution to the relevant areas is well acknowledged throughout the world. Some of the mental health care ideas they have on board are as follows:

• After obtaining therapy, those with reactive depression and stress may return to their jobs without posing a threat to safety, however they may be assigned less difficult employment. If a seafarer has been diagnosed with a severe depressive disorder that poses a risk not only to the seafarer's life but also to the lives of his or her coworkers and the ship, he or she will not be allowed to return to work until they have been evaluated and have shown they are no longer a danger to themselves or others.
• In the event that a sailor develops feelings of depression, stress, or anxiety while at sea, they are welcome to seek the help of a port's welfare specialist. Having a way to get in touch with loved ones helps alleviate feelings of isolation and loneliness.
• People who are regarded to be depressed and considering suicide should be monitored closely. It's quite impossible to accomplish in practice, so keeping the sailor locked up in his or her cabin and keeping an eye on him or her are the best options. Other safety measures, such as getting rid of any weapons or drugs in the cabin or anything that may be used to hurt someone, should also be done.
• When a ship's crew feels more certain in their abilities and more at ease with their work, it's because

they have a better understanding of their duties and responsibilities on and off the bridge.
• Sailors' emotional well-being is profoundly impacted by the ship's morale. Whether morale is low among the crew, they are less likely to "go the extra mile" when on watch or working on deck, which may have a negative impact on efficiency. The ship's morale is significantly impacted by the level and quality of communication among crew members. Sharing information that is accurate and current is essential to improving the competency of sailors and the morale aboard.

International Maritime Organization (IMO)

Human Rights at Sea (HRAS), International Transport Workers & Federation (ITF Seafarers), and Seafarers & Rights International (SRI), an independent body adopting similar principles and values as the IMO in regard to seafarers, are all conventions that the IMO has adopted and enforced in the area of human rights. On June 25th, 2018, the IMO chimed in on the rising maritime industry movement to improve the lives of sailors. Support Seafarers' Wellbeing on International Seafarers' Day (June 25). "Day of Seafarer provides a platform to advocate for higher standards of welfare and enable shipping companies and others within the industry to show how they provide a good working environment for seafarers and thereby make a positive contribution to their wellbeing," Kitack Lim, Secretary-General of the International Maritime Organization, said in his annual message On this day, sailors are encouraged to fill out an online survey on their experiences at sea. The results of this survey are subsequently compiled and submitted to the IMO council. The campaign's upbeat theme encourages marines to talk about the good times they've had at sea, which may boost morale and show the bright side of their jobs. The secretary general of the International Maritime Organization (IMO) encourages all seafarers to get involved in the campaign and share their stories to bring the attention mental health issues deserve.

The Finnish Government and other Finnish organizations

The Ministry of Social Affairs and Health created the Masto initiative to lessen the prevalence of both depression and depression-related disability. Its key goals are to promote workplace health and happiness, aid in the prevention of depression, guarantee effective treatment and rehabilitation, facilitate a speedy return to work, and cut down on disability payments due to mental health issues Main features of the programmed, which is aimed at every one of working age, are:

• Workplace mental health and wellness promotion
• Programs designed to help people avoid depression.
• Recognizing and treating depression in its early stages
• Recovery and re-entry into the workforce.

In Finland and elsewhere in Europe, researchers have extensively examined the mental and physical toll that stress on the job may have on the human body. Epidemiological studies found a strong correlation between workplace stress and illness, which was discovered by Finnish researchers working alone or with colleagues in Finland. Among these illnesses were:

• Work factors such as time pressure, a negative work environment, and a lack of control over one's schedule are key contributors to the increased risk of mental illness among employees in demanding employment, such as sailors.
• Increased likelihood of burnout due to excessive job demands, bad work environment, and insufficient

crew on certain boats.
• The probability of receiving a pension as a result of work-related depression is higher than average.
• Working conditions and occupations that cause stress have been linked to an increased risk of heart disease and death.

Municipal administrations, hospital districts, private service providers, and several other Finnish organisations are coordinating mental health care for seafarers. Help for depressed sailors is available from a variety of sources, including healthcare facilities, occupational healthcare, specialist psychiatric treatment, psychotherapists, and other groups. Larger cities often have more healthcare service providers and a wider variety of services due to the public and private organisations involved.

If a sailor is suffering from depression, he or she should first notify the ship's authorities, who will then arrange for the sailor to receive the necessary care ashore. The primary cares a sailor receives comes from his or her healthcare centre or from occupational healthcare centers, and the quality of these services available to seafarers depends on the agreement between the shipping company and the occupational health care. When mental health services are needed beyond what can be provided by occupational health, a doctor may make a recommendation to a specialist.

government-funded medical care that corresponds to private care. Some communities employ depression nurses who can assist residents who are experiencing emotional distress. It is preferable to get a reference from the occupational healthcare physician, while some towns do enable people to arrange appointments with their mental polyclinic directly. The patient must pay for private treatment since the psychiatric polyclinic does not provide regular, longterm psychotherapy. When a doctor refers a patient to psychotherapy, the patient may be eligible for financial assistance from the Finnish social insurance organisations, KELA Seafarers were more likely to get unwell than injured in the last year, as seen in Figures 1 and 2. First aid was the primary method of treatment for sailors' injuries, while medicine was used for sickness (Figure 3). Hospitalization was necessary for 21% of injury cases, and work limitations were imposed on 13% of those injured. Medication was the primary method of care for illnesses (45%), whereas hospitalization (11%) and work restrictions (8%) were very uncommon. Only 4% of those injured and 3% of those sick required evacuation.

Figure 1. Percentage of seafarers reporting an injury while working on board during the past year.

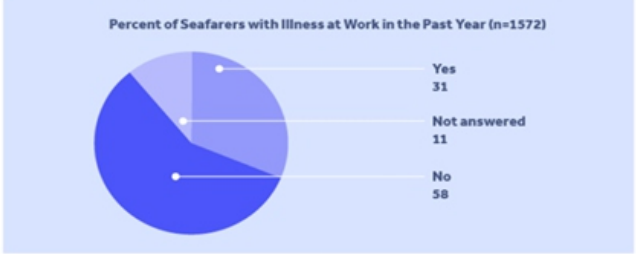

Figure 2. Percentage of seafarers reporting an illness in the course of work over the past year.

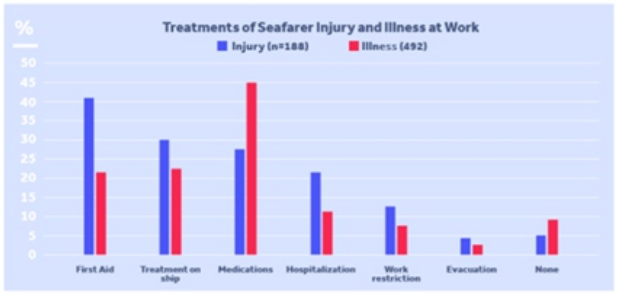

Figure 3. Treatments rendered for seafarer injuries and illness at work, an indication of the severity of the medical event.

THE IMPACT OF THE PANDEMIC ON THEIR WORK AND LIFE ONBOARD ARE ANALYZED

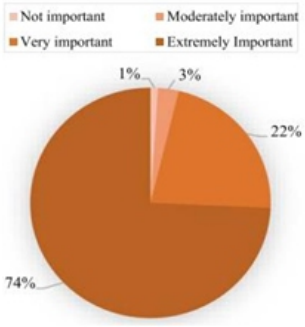

Fig. 4. Importance of mental health to general health.

Ninety-six percent of those polled ranked mental health as either "very important" or "very essential" to their overall health (Fig. 4). No one who participated in the survey selected "slightly."

More over half of the sample (58%), when asked how they felt COVID-19 impacted them, said it had a "very" or "severe" influence on their mental health and wellbeing, while 24% said it had a "moderate" impact (Fig. 5).

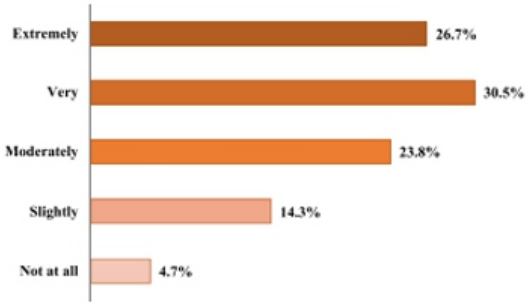

Fig. 5. Impact of the COVID-19 on seafarers' mental health and wellbeing.

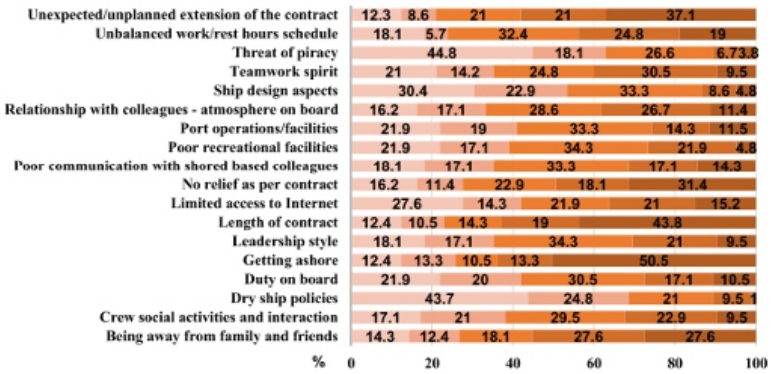

Fig. 6. Factors contributing to mental health most affected by COVID-19.

Figure 6 displays how respondents perceived COVID-19 to impact several elements of mental health and wellbeing. Getting ashore (64%), the length of the contract (63%), being away from family and friends (55%), an unexpected extension of the contract (58%), no relief as per contract (49%), and an unbalanced work and rest hours schedule (44%), were all cited as factors that had a moderate to severe impact on COVID-19.

Conclusion

It is often believed that seafarers are exposed to both physical and psychological hazards on the job. It is crucial to be able to recognize the warning signs of depression in order to get someone the care they need, especially since one can never predict when suicidal thoughts may begin to surface. Because of the intangible nature of mental diseases like depression, seafarers often dismiss them. According to the results, very few respondents felt they needed professional help. Although more might be done, it's encouraging to see so many people invested in finding solutions to the problem of depression among mariners. During the pandemic, more than half of the sample (58%) said that their mental health and welfare were impacted severely or significantly due to COVID-19. What parts of respondents' mental health and wellbeing do they feel are most impacted by COVID-19?

REFERENCES

1. Agnieszka Rzepka et al (2021),” Self-Management, Entrepreneurial Culture, and Economy 4.0
2. Hemming (2020),” Do workers with long-term health conditions need self-management support at work?
3. Gill Hasson (2020),” Mental Health and Wellbeing in the Workplace: A Practical Guide for Employers and Employees Paperback”,
4. Arkaprabha Sau (2019),” Screening of anxiety and depression among seafarers using machine learning technology”
5. Joanne McVeigh et al (2019),” Identifying Predictors of Stress and Job Satisfaction in a Sample of Merchant Seafarers Using Structural Equation Modelling
6. Cameron K.S., Quinn R.E. Diagnosing and Changing Organizational Culture: Based on the Competing Values Framework. 3rd ed. John Wiley & Sons; Oxford, UK: 2011.
7. Carter T. Seafarer medicals: Population health or private gain? Int. Marit. Health. 2016; 67:1–2. doi: 10.5603/IMH.2016.0001
8. Chung YS, Lee PT-W, Lee J-K. Burnout in seafarers: its antecedents and effects on incidents at sea. MPM. 2017;44(7):916–31.
9. Haka M, Borch DF, Jensen C, Leppin A. Should I stay or should I go? Motivational profiles of Danish seafaring officers and non-officers. Int Marit Health. 2011;62(1):20-30.
10. Jeżewska M., Grubman-Nowak M., Moryś J. Quality of life at sea in Polish seafarer’s evaluation. Int. Marit. Health. 2015; 66:247–251. doi: 10.5603/IMH.2015.0046.
11. Ko Y.K., Yu S., Kang K.H. Organizational culture and organizational support as factors affecting the innovative behaviors of general hospital nurses. J. Korean Acad. Nurs. Adm. 2015; 21:223–231.
12. Lee J.S., Kim T.H., Shin Y.J. The impact of communication and conflict on group cohesiveness and organization effectiveness in ship organization. J. Navig. Port. Res. 2012; 36:489–499.
13. MacLachlan M, Kavanagh B, Kay A. Maritime health: a review with suggestions for research. Int Marit Health. 2012;63(1):1-6
14. McVeigh J, MacLachlan M, Vallières F, Hyland P, Stilz R, Cox H, et al. Identifying predictors of stress

stress and job satisfaction in a sample of merchant seafarers using structural equation modeling. Front Psychol. 2019;10(70):1–13.

15. Nielsen MB, Bergheim K, Eid J. Relationships between work environment factors and workers' wellbeing in the maritime industry. Int Marit Health. 2013;64(2):80-8.

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REFLECTION OF UZBEK NATIONAL EMBROIDERIES IN WORKS OF ART

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ABSTRACT

The article provides information about the history of the Uzbek national embroidery art, methods and laws of embroidery. Scientific opinions on the representation of embroidery in works of applied art are presented and examples are given.

Keywords: *embroidery, canvas, groats, print, zardevor, suzani, borposh.*

INTRODUCTION

The art of embroidery, which is reflected in the Uzbek people and the national fabrics created by them, has found its place in world art with its luster, various colors, and Islamic motifs. Items embroidered by folk masters are distinguished by beautiful flowers, matching of colors, full proportions, and professional accuracy of execution methods. Many examples of folk embroidery are collected in the museums of our country, especially the best ones of the 19th century have been preserved and have survived to this day. The art of embroidery has a centuries-old history. According to archeological findings, since ancient times, household items were decorated with embroidery on towels, lace borders, tablecloths, festive and everyday clothes, scarves, hats and other items.

LITERATURE ANALYSIS AND METHODOLOGY

Embroidery is an important branch of applied art, which is considered one of the types of crafts developed in almost all regions of Uzbekistan. The word kashta is derived from the Persian-Tajik language, "kashida", which means to pull, pull and sew. Embroidery is a fun and creative activity that can bring a lot of joy to a person and lead to a world of sophistication. When mastering embroidery techniques, the work done may not turn out well at once, because embroidery requires patience, attention, order.

The thread for embroidery with gauze is selected according to the purpose of the item, the character of the decoration and the method of sewing. Gauzes woven by the linen method for embroidery with counted threads: linen and semi-linen fibers (unbleached, white and colored), marquise, staple and silk canvas, sparse (sparsely woven from cooked linen thread) gauzes is taken. The warp and weft yarns of gauzes woven by the canvas method are woven together. That's why the tanda thread sometimes goes over and sometimes under it. Yarns woven in this way are firm, less stretchy and less penetrating, and the right and reverse sides are the same. If the thickness of the threads is not the same, the work will be more difficult, because the number of threads counted when pulling out the warp and weft threads will be different, and the stitched embroidery will not be even. Linen, silk, woolen, striped or checked fabrics, as well as large patterned fabrics are suitable for embroideries sewn along the drawn contour. The choice of color thread according to the material to be embroidered is of great importance in embroidery. This requires great skill and taste from the embroiderer. The compatibility of the color of the silk threads used in the embroidery also makes the embroidery look attractive. In the past, due to the scarcity of different

colored fabrics, most decorative embroideries were made by covering the entire surface of the fabric with embroidery.

Currently, decorative items such as suzani, bedclothes, jewelry are sewn from velvet, silk, satin gauze, and it is not necessary to fill the gauze layer with threads. The art of decorating artistic gazlams in Uzbekistan is truly an unprecedented phenomenon in folk art. In it, together with the high traditions of ancient folk art, the art that encourages people to feel the aliveness of the present time is wonderfully embodied. Most of the still preserved embroidery dates back to the middle of the 19th and early 20th centuries. These embroideries are distinguished by their beauty, elegant embroidery proportions, style and colors of ancient ornaments. According to experts, during this period, embroidery reached a high level. The diversity of embroidery stitches, embroidery, and styles testify to the great art of Uzbek embroiderers. For example, Nurota, Bukhara, and Samarkand embroidery products are mostly made with plain stitch, in Shahrisabz with plain, kandakhayol, iraqi, and in Tashkent with printed stitch.

DISCUSSION AND RESULTS

Practical art is spread in almost all regions of Uzbekistan. But only Khorezm has not found any evidence of traditional embroidery art until now. This type of craft not only occupies an important place in the everyday life of the Uzbek people, but also reflects the poetic symbols and symbols of the nation, which go back to the distant past. In Bukhara in the 20th century, noblemen, men's and women's clothes, and even shoes were decorated with gold embroidery. Various bags that carry things like money, comb, seal, pocket, and watch are decorated with Islamic motifs of buds and almonds. Purses are embroidered on both sides, and all other items are embroidered on one side only. The composition of Gijduvan embroidery consists of a traditional central area, a wide border and 2 narrow borders, symmetrical patterns are arranged in a row in the central area. In the wide border, the patterns in the central area are repeated in a symmetrical position or in an "Islamic" position. In two narrow borders, two or three lines of overlapping geometric "Islamic" pattern, "miander", "mavj" or "sebarga" are passed. In the first case, the composition consists mainly of geometric circles, "petal flowers", bushes and branches. Left open places are filled with images of leaves, twigs, jars, suns, and in some cases birds.

Picture 1. Flowers, silk adras, printed stitch

Depending on the appearance, shape, size, base (base fabric), patterns, sewing style of different embroidery, their place in marriage is determined. Wall hangings (height 230-280 cm, width 170-200 cm) have a central floral design and a border. Borposh (tahmanposh), used to cover the top of beds assembled in Takhman, is distinguished by its small size (height 170-250, width 120-150 cm). Sandalposh was square in shape, with the same size (160 cm or 180 cm) on all four sides. A piece of embroidery for the wall part of the room is decorated with ornate repeating flowers. It is 50 cm tall and 350-400 cm wide. Its surroundings are bordered by "oba" and decorated with "chicken panja" patterns. Zardevors are mainly made in the form of long, shoulder straps. Such frieze strips are used to decorate

the upper part of the transverse and longitudinal walls of the room. 14 petals are placed in such ornaments. It is mainly sewn with blue, brown and gray threads.

The skills and art of Uzbek embroiderers are clearly demonstrated in the suzani. A har, sewn with silk and cotton threads on dark red, orange or black cloth different shapes and patterns have their own meaning. A certain item, a branch, a part of a plant, the Moon, the Sun, represent the colors of a certain part of the earth. The silk threads used in embroidery are of bright colors. In modern dictionaries, you can find clearly and vividly depicted zoomorphs - images of animals, anthromorphs - images of people and plants: images of plant leaves, roses and various flowers.

Picture 2. Zardevoor

It took a long time to make big suzanis. Previously, the fabric with the flower print was cut into pieces and each piece was sewn separately. Then these pieces are connected to each other and become a whole. At the beginning of the 20th century, suzanis were made of white karbos (gray) or yellow thick fabric. These embroideries can be explained by their charm, variety, delicate sewing technique and charm of silk threads in natural dyes. Later, purple, blue, and brown fabrics produced by artisans were used for embroidery. Words are truly works of art. Each of the drawn patterns, flowers and shapes represented a certain symbolic meaning. For example, flowers – love, blooming branches – well-being, embroidery with jugs and trees meant – a decent lifestyle, almond – a symbol of longevity and eternity, pomegranate – a symbol of prosperity and wealth. Stylized hot peppers were used to protect against envy and the evil eye. Silk prints reflected on ordinary fabric are a unique expression of the rich history of our nation, human dreams, love and happiness. In the past, girls and women used to embroider expressions of their hearts in the words. There are many types of embroidery, such as bush, flower tree, double-leaved tree, tagalak, anguri, and shobarg. such patterns are found. In some cases, large buildings were decorated with Persian and Turkish verses written in Arabic script.

Embroidery had a special place in decorating the clothes of the Uzbek people in the past. Men's and women's shepherds' and mursaks, burqas and collars of other clothes, and hats, which are national headdresses, are decorated with embroidered patterns. Chust caps embroidered with white silk thread with "almond" and “pepper" patterns were especially popular.

Picture 3. Women's coats, silk adras, cotton wool

CONCLUSION:

The main artistic embroidery schools in Uzbekistan were formed in the late 18th and early 19th centuries in six cities: Nurota, Samarkand, Shahrisabz, Tashkent, Fergana and Bukhara, and reached the peak of their development at the beginning of the 20th century. Currently, the traditions of Uzbek embroidery of the 19th and 20th centuries are being revived. Madina Kasimbayeva, the only embroiderer who successfully restores the traditions of the Tashkent school of embroidery, not only created copies of old crafts, but also developed new forms and compositions without harming the originality of the patterns, and made a great contribution to Uzbek national embroidery. Uzbek national embroidery art has gained fame not only in our country, but also abroad. Uzbek embroiderers sewed with their own direction and skill, examples of practical art such as bricks, suzani, zardevor, flower quilts, sheets, etc. France, Italy, Japan, Germany, Belgium, America, India participated in exhibitions of foreign countries, and many examples of these embroidery are stored in museums of applied art.

REFERENCES

1. Nafisa Sodiqova, "O'zbek milliy kiyimlari XIX-XX asrlar", 2006
2. Binafsha Nodir, "So'zananing tug'ilishi", 2018
3. N.A.Mamarasulovich, N.S.Iskandarovna, Traditional Uzbek Embroidery History and Analysis of Their Symbolic Meanings. Spectrum Journal of Innovation, Reforms and Development, 2022
3. Q.M.Abdullayeva, M.A.Maxsumova, M.H.Rahimjonova, "Gazlamaga badiiy ishlov berish. Kashtachilik va uni o'qitish metodikasi"(Kasb-hunar kollejlari uchun o'quv qo'llanma), 2012
4. R.S.A. Qizi, U.S.Rakhmatullayeva, D.X.Temirov, Creation of methods of making national costume decorative elements, An International Multidisciplinary Research Journal, 2022
5. M.Shaymarovna "O'zbek milliy kashtachiligi tarixi", 2017.

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ANALYSIS OF THE DESIGN OF SPORTSWEAR FOR PRESCHOOL CHILDREN FOR SWIMMING

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ABSTRACT

The article is presenting a classification of the range of sportswear with brief information about the fabrics recommended in the production of training clothes for swimmers, including "Smart Fabrics".

Keywords: *Sportswear, comfort, performance, knitted fabrics, smart fabrics, water-repellent features.*

Classification of the Range of Sportswear

The functional purpose of modern sportswear is wide and varied. For example, for specific sports, it is customary to use special and different types of clothing. They have a specific cut and a regulated appearance, allow protecting the athlete's body from physical injuries and, accordingly, assist the athlete in achieving high sports results. In addition, the range of sportswear includes products and accessories that occupy an intermediate position between sportswear [1].

It would be appropriate to name the main factors here as an increase in the population, which explains the growing demand for textiles for household use, while the production of natural fibers of plant origin is declining, due to displacement from the cultivated area and competition from food crops, in particular due to the fact that their cultivation provides a great profit. Also, an important factor worth noting is the constant improvement of existing performance properties and new types of chemical fibers. This, in turn, contributes to a significant expansion of their scope for both household and technical products [2].

The range of mixed materials for household use is also developing in connection with the creation of knitted fabrics of new structures that combine all the advantages of materials made from chemical fibers (namely, shape stability, significant wear resistance, non-shrinkage and crease resistance) and natural fibers (which contribute to increased moisture absorption and moisture release, steam and moisture-permeable and other important properties), which invariably ensure the comfort and quality of products [3].

In the Republic of Uzbekistan, the production of various knitwear from both natural and mixed fibers has been established. It is worth mentioning that cotton products, in addition to good hygienic properties, have a number of negative qualities such as high shrinkage, relatively low tensile strength and / or elongation, as well as low form stability. The most positive effect is the use of cotton mixed with other fibers: cotton with nitron, silk with nitron [4], cotton with lavsan, etc. An analysis of the literature confirmed that such sports products as trousers, knitted and windproof tracksuits, various jackets (light and insulated), overalls and semi-overalls, bathing suits, sweaters, knitted jumpers, jerseys and others - differ in ease of use, ease of assembly and interchangeability.

ORIGINAL THERMO products are widely recognized and well-known in the knitwear market in the sports industry. A distinctive feature of "ORIGINAL THERMO" is that in conditions of increased sweating, wet clothing does not cause the athlete to feel cold in it. Cotton, wool or a mixture of them with

polyester fibers is used to make the front side of this brand's jersey. At the same time, the wrong side is produced from yarn from polyacrylonitrile fibers (PAC), which are characterized by a significantly higher volume and significantly lower thermal conductivity compared to yarn from natural fibers[5]. The most characteristic of this jersey is the “warm neck”. A person in such clothes quite naturally feels comfortable in dry heat.

Smart Fabrics in Light Industry:

A person always remains interested in improving the level of quality and functionality of clothing, and it is for this reason that the question of the possibility of improving products always remains relevant. The development of special - "smart" (intellectual) - fabrics that are able to recognize changes in the environment and painlessly adapt to them through functional transformations, is necessary in cases of not only protection from a sudden change in weather, but also from mechanical injuries, or other unforeseen situations. Depending on the degree of development of the "intellectual" properties of tissue, they can be: passive, which only reveal changes in the environment; active, who are able to respond to them; and "very smart" B, meaning the ability to adapt to all sorts of changes. The scope of their application ranges from the military industry (fabrics with customizable characteristics for equipping troops) to medicine (fabrics with built-in sensors and sensors that allow monitoring the state of health)[7].

Custom fabrics:

In the desert, in space, on the Arctic shelf or in other hard-to-reach areas, the human body can experience various kinds of overloads associated with temperature changes, physical or mechanical injuries (bruises, sprains, for example) and other factors. Fabrics with customizable characteristics are aimed at protecting a person from them and reducing the consequences of these loads. At the same time, their structure is capable of changing in accordance with the potential requirements of the environment: keeping warm, or heating in the cold, exactly, as well as vice versa, cooling in the heat, acquiring shockproof, water-repellent or other functions[8]. Fiber optics, metals, conductive polymers and other materials are most often used to create such fabrics. It should be noted that there is an increasing trend towards the introduction of nanostructures for the modification of natural and synthetic fibrous materials. These manipulations are caused by the need to impart hydrophobic, antibacterial properties, protect the owner from the negative effects of ultraviolet radiation, and others. Zimmermann engineers (a German company) have learned how to weave thin wires into the material, which can heat clothes to the required temperature (maximum - 420°C). To do this, it provides a miniature battery with a weight of up to 200g and a capacity of 2200mAh. Safety is also provided: the voltage is only 7.4V. When you go outside and press the button, the clothes will heat up to the set temperature.

Properties of a personal doctor in "Smart" clothes:

The problems with comfort in today's world are exacerbated by the rise of a wide range of chronic diseases in people who may not be aware of their illness. However, in the case of wearing clothes equipped with touch sensors that will collect basic information about human health in order to provide it for subsequent analyzes, this problem can be, if not eradicated, then at least reduced. With the help of "smart" clothing, it will be possible to prevent the development of diseases in the early asymptomatic stages, which will undoubtedly remove potential risks to people's health[9].

Indicators of pulse rate, respiration, heart rate, sugar level, etc., which will be measured by sensors woven into the "smart" fabric, will then be broadcast to the user's mobile phone, or to the attending physician. The thickness of each sensor will remain within a few millimeters, which will not cause discomfort to the wearer. Another important achievement in this area, which is rightfully considered promising, is the development of tissues that diagnose diseases and implants capable of administering medications (for example, insulin) on a schedule [10].

The phrase “like water off a duck's back” is now relevant not only in relation to birds and indifferent people. In the modern world, the most popular are things with protective coatings that repel both moisture and dirt, resembling goose feathers in functionality. The list of the most common protective fabrics includes: Teflon - is a 1930s find that is a transparent protective film. The most effective Teflon coating fabric designed to protect against wind, water and other damage. At the same time, Teflon products are quite easy to maintain and do not interfere with ventilation. Ventile - first developed for military needs. It is a type of Egyptian cotton. The cotton weaving technique is designed to let air through but block water. Gore-Tex - reminiscent of Ventile properties: waterproof and dry. However, unlike the same Ventile, the effectiveness of Gore-Tex is not due to the weaving of cotton, but to the membrane, which, in turn, provides protection from water. Things with these fabrics can be found in the assortment of many famous brands that produce products for outdoor activities or sports. An example is The North Face, who posed extensively for waterproof Gore-Tex jackets and pants.

"Smart" Textiles for Sports:

Not only streetwear, but also tracksuits have been influenced by the development of textile technology. Below is a more detailed list of fabrics actively used by brands in the creation of sportswear collections. Dri-FIT - is a technology patented by Nike. An excellent feature of the fabric is that it is made from a polyester base of highly functional microfiber. Dri-Fit supports the body's natural ability to cool itself. Thanks to this, the fabric perfectly wicks away sweat. ClimaCool - is actively exploited by another sports brand Adidas. The technology is based on a special material with a three-dimensional structure. It provides coolness during hot workouts, while actively removing moisture from the athlete's skin. Techfit - is the most widely used in athletics and running. Techfit is the closest fit to the body to reduce friction, immobilizing the athlete, which makes it easier to perform quick maneuvers, helping to better feel every movement. It is also considered that the fabric is aimed at helping in muscle recovery and relieving tension after prolonged strength training [11].

What could the first "smart" swimsuit look like?

The Fastskin 4.0 from famed spitting company Speedo has been billed as "the smartest swimsuit of all time". It is stated that the swimsuit should speed up athletes by 4%. In addition to Speedo itself, AQUALAB participated in the development of the Fastskin 4.0 concept. According to Dr. Rob Blenkinsopp (head of development at AQUALAB), Fastskin 4.0 is thought out in the most detailed way, including intelligence integration fabrics and textures. Among other things, they plan to equip it with built-in intelligence. The very same "fabric" will be created from bioengineered genetically modified bacteria, which will increase the possibility of decomposition of the suit up to 80%.

It is assumed that the "corset" of the swimsuit will be equipped with a built-in exoskeleton, the surface of which will imitate the skin of a shark, which should help the swimmer to improve performance. An equally interesting fact is the presence of built-in AI Live Coach technology, which helps the athlete listen to the coach while remaining underwater. The official website of Speedo says that Fastskin 4.0 is planned to be equipped with an "artificial intelligence trainer". The suit will also include micro-sensors that monitor the performance of the athlete before, during and after the race. And this means that not only coaches, but also the athletes themselves will be able to track their condition during the race and control their recovery period. Unfortunately, at the moment Fastskin 4.0 is only a concept and the release of real costumes and models remains the subject of theoretical discussion [12].

REFERENCES

1.Filimonova O.S., Candidate of pedagogical sciences. Thesis: Organization and content of physical education children of the older preschool age with various the state of the muscle-motor apparatus on the basis fitness tools (2008).
2. Perepelkin K.E.// Chemical fibers. №3. -p.3-10, №4.-p. 3-10, (2003). Perepelkin K.E. // Past, present and future of chemical fibers. - MSTU, p.208, (2004). Perepelkin K.E. // Principles and methods for modifying fibers of fibrous materials // Chemical fibers. №2. -p.37-51 (2005).
3. Kudryavtseva T.N. // Production of competitive cotton-type yarn using new types of raw materials textile industry. № 5. – p.26-28. (2002).
4. Nabieva I.A. // Improving the complex of physico-chemical properties of the nitron fiber. Textile problems. № 3, p.12-15. (2004).
5. Mirtalipova, N. K., Yunuskhodjayeva, K. M., & Kamilova, K. H. (2019). The role of attributes in special types of clothing. International Journal of Recent Technology and Engineering, 8(3), 2460-2463.
6. Kamilova, H. H., Yusupov, F. Sh., Navatova, A. D., & Amirova, E. A. (2000). The influence of the nature of the seams on the strength properties of the fabric.
7. Muminova, U. T., & Tashpulatov, S. Sh. (2012). System design of clothing sets for young children.
8. Muminova, U. T. (2022). INFLUENCE OF PHYSIOLOGICAL ASPECTS OF THE DEVELOPMENT OF CHILDREN'S ORGANISM ON THE CHOICE OF MATERIALS FOR CHILDREN'S CLOTHING. American Journal of Interdisciplinary Research and Development, 11, 149-153.
9. Muminova U. T. (2022, December). STUDYING REQUIREMENTS FOR CLOTHING OF KINDERGARTEN TEACHERS. In the conference area (pp. 588-591).
10. https://issek.hse.ru/trendletter/news/179745785.html
11. https://shopoglot.com/technological-fabrics/
12.https://www.popmech.ru/popmem/710353-posmotrite-kak-mozhet-vyglyadet-pervyy-umnyy-kupalnik/

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Note