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Warehouse Processes from Replenishment to Despatch and Beyond

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Abstract:

Today, the radical reform of warehouse logistics and its modernization lead to further development of this field. In this article, we will consider how to fill the warehouse and the sequence of processes in it.

Keywords: Warehouse, filling, system, logistics, operation, cargo flow, transport, cargo, product, cargo order, pricing, security, securities.

Introduction

In this chapter we examine the remaining processes within the warehouse. These include replenishment, value-adding services and despatch, together with the peripheral but essential tasks of stock counting and housekeeping. We also look at security measures that can be taken within the warehouse.

Replenishment

In order to ensure a smooth and efficient picking process we need to ensure that the right products and quantities are in the correct pick location. This is replenishment.

As in the case of replenishing overall inventory to ensure customer satisfaction, the warehouse also has to replenish its pick faces regularly to ensure picker satisfaction. An empty picking slot, just like an empty shelf location in store can mean a lost sale. The result of a poor replenishment process is order shortages, increased picking times and therefore increased cost per pick and an overall reduction in service level.

Real-time WMSs will recognize the need to replenish pick locations through real-time data transfer. These systems are also able to identify the total actual order quantities and therefore replenish before the next wave of orders arrive on the warehouse floor.

Other systems will rely on a trigger that denotes when the stock level within a pick face falls to a certain level. This will rely heavily on timing as orders that have generated pick lists may not actually have been picked and therefore replenishment has been triggered early. Late replenishment can result where staff have picked out of sequence, for example, and emptied the pick bays before the replenishment team have had an opportunity to top up the location.

Timing is crucial. An early instruction to replenish can cause as many problems as late replenishment, with potentially overfull pick faces and issues with FIFO.

If product can be moved directly to the pick face from the inbound section this cuts out a number of processes. This will require a certain amount of preplanning to ensure that pick faces are not overfilled. Pallets can be de-layered to correspond with expected pick quantities.

In the absence of a warehouse management system the warehouse manager will need to first ensure that the pick faces are designed to take the optimum quantity of product based on predicted sales

per day or per shift and cubic volume, and staff need to be trained to identify replenishment requirements and inform either the supervisor or the forklift truck driver, depending on how the process has been set up.

One other point to note here is that although real time dictates that replenishment and picking can occur simultaneously, there are issues of worker safety if forklift trucks and pedestrian pickers are working together in the same aisle.

This can be alleviated by incorporating multiple picking locations for the same SKU, the utilization of flow racking where product is replenished from a separate aisle and by carrying out the two activities at different times of the day if feasible. For example, receiving and replenishment can take place in the morning whilst picking takes place in the afternoon.

Alternatively, replenishment can take place during breaks or after picking has been completed for the day. This mirrors what happens at retail stores where shelf replenishment takes place when stores are closed overnight. Bendi's introduction of their combined articulated truck and picker will also go some way to alleviate the problem of empty pick faces whilst picking.

Value-adding services

Many warehouses have introduced areas where value-adding services can be carried out. These are common in both dedicated and shared-user or public warehouses where third-party logistics companies are providing an all-encompassing service to their customers.

These value-adding services include the following:

- (re)labelling;
- pricing;
- tagging and kimballing;
- (re)packing;
- bundling, as in 'buy one, get one free' (BOGOF) offers;
- reconfiguration;
- sub-assembly;
- repair and refurbishment.

Undertaking shop-floor-ready labelling, tagging, bundling and pricing in the warehouse removes the task from the retail assistants who can spend more of their time selling.

More sophisticated services include some form of production as in the case of postponement where items are added once the customer's order is known. This can include the inclusion of graphics cards and the loading of software in the case of personal computers and laptops. It can also include the fitment or inclusion of a particular part for a specific market. The UK electrical plug is a typical example as it differs from the rest of Europe.

Postponement can be described as a delay in the completion of an item until an actual order is received from a customer. Postponement not only saves time but reduces inventory holding by reducing the total number of SKUs held in stock.

Value-adding services can also include returns processing and a repair service. This area is covered in more detail at the end of this chapter.

Sufficient space needs to be made available for these tasks, with access to power and being close to the despatch area, thus reducing any unnecessary movement. An ideal location, if the height of the warehouse allows it, is above the despatch bays on a mezzanine floor.

Indirect activities

There are many support activities that occur in warehouses and are crucial to the efficient operation of the warehouse. These are, in the main, undertaken by supervisory staff, specialist teams and the housekeeping team. These activities include:

- ensuring optimum staffing levels and providing a pool of suitably trained staff for peak periods;
- managing the allocation of labour for value-adding services;
- ensuring optimum space utilization;
- monitoring work flow and congestion;
- provision, allocation and maintenance of equipment;
- identification and replenishment of fast-moving items;
- identification of non-moving stock;
- stock integrity and dealing promptly with non-conforming, lost or found stock;
- managing cycle counts and organizing full stock checks;
- security of high-value or hazardous stock; and
- ensuring the cleanliness of the warehouse and the safety of both staff and visitors.

The above tasks can be separated into three distinct sections:

- the management of labour, space and equipment;
- the control of stock; and
- the security and safety of stock and people.

Stock management

Inventory or stock management and warehouse management tend to be two very distinct roles.

Warehouse managers are in a position to advise their inventory colleagues on levels of safety stock and the specific movements and characteristics of particular stock items. However, they tend to stop short of determining stock levels.

This function is a major part of a company's operation and the theories and practices are covered in many books on the subject of inventory management.

Although the majority of warehouse managers are not involved directly in the choice, purchase and replenishment of stock, they can play a role in the identification of fast-, medium-, slow-, non-moving and obsolete stock.

This can be done using one of the mainstays of a warehouse manager's armoury – an ABC classification.

A warehouse manager can extend the normal classification to include nonmoving and obsolete stock together with identifying stock that may not require storage in the warehouse but can be despatched direct from the supplier to the end customer where the lead-time is in line with the customer's requirement.

The classification might look something like that shown in Table. The percentages will vary significantly by company and by market sector.

Maintenance stores are likely to have a high proportion of their stock in the C to X categories. The goal is to identify the items in the C to X categories and act accordingly.

Obsolete or non-moving stock needs to be analysed and one of the following tasks undertaken:

- Return to seller if the contract allows.
- Sell to staff at a discount.
- Sell the item at a highly discounted rate either through normal channels or via companies who specialize in selling overstocks and obsolete items.
- Assess whether it is cost effective to break the item down into its constituent parts.
- Donate to charities.
- Dispose of the product as cheaply as possible. This may incur charges but it will release space to store other faster-moving product in its place.

A quick and easy way of ascertaining whether there is an excess of slow-moving stock in the warehouse is to calculate the stock turn:

Stock turn = cost of goods sold ÷ average cost of goods stored

or:

Annual throughput in units ÷ average number of units held in stock

For example, an annual throughput of 1,200,000 units with an average stockholding of 100,000 units gives a stock turn of 12. That is, the stock turns over once per month.

A low turn in most operations suggests that stock sits in a warehouse for far too long, implying that the safety stock level has been set too high.

Typical examples of stock turn within companies are as follows:

150 +: world class using just-in-time techniques;

120 +: chilled foods;

18 +: retail;

10–30: European manufacturing;

<3: maintenance stores.

The higher the figure, the better the company is performing in terms of inventory management. Maintenance stores will always have low stock turns through having to hold stock in case of breakdown.

Stock or inventory counting

All warehouses are obligated to undertake some form of stock count. It depends on the law of the country and accounting requirements as to how frequent and comprehensive the count is. We have seen over recent years a move towards cycle counting or perpetual inventory counts as a replacement for an all-encompassing annual count of stock in the warehouse. A full stock count usually necessitates the closure of the warehouse for a period of time when all inbound and outbound movements are suspended. A significant drawback of a single annual count is the

difficulty in reconciling the discrepancy as it could have occurred over 11 months ago.174 Warehouse Management The count is normally carried out at the company's year-end. Some companies will carry out quarterly or possibly half-yearly checks depending on the stipulations laid down by the auditors. More recently, providing the company can prove that its cycle counting is accurate, auditors have agreed in some cases that if each stock line is counted and audited at least once per annum that will be sufficient for their needs. Providing the cycle counts are considered to be accurate, the year-end stock figures will be taken from the WMS.

Cycle counting or perpetual inventory counts

When undertaking cycle counts it is prudent to use an ABC analysis to ensure that your fast-moving and high-value items are counted more frequently than your slow-moving, inexpensive items. Mis-picks are more likely with fast-moving goods, and high-value items are prone to shrinkage. It is suggested therefore that fast-moving and high-value items are counted monthly, medium sellers are counted quarterly and slow-moving items either once or twice a year.

The following percentages can be used to ensure a comprehensive count:

- 8 per cent of A items counted weekly (ensures each SKU is counted approximately once per quarter);
- 4 per cent of B items counted weekly (counted twice per annum); and
- 2 per cent of C items counted weekly (counted at least once per annum).

The accuracy of the counts will also determine the frequency. A high error rate should result in more frequent counts until the accuracy improves. Each discrepancy needs to be investigated and procedures put in place to ensure that there is no repeat of the problem. Increasing the frequency to daily ensures a more accurate count; however, this will depend on the number of product lines, available resource and the cost of that resource. The trade-off here is the cost of the error against the cost of discovering it in the first place. As mentioned previously, a number of auditors will be happy (or as happy as they can be) if stock in the warehouse is counted at least once during the year. All stock counts require organizing. You need to know who will undertake the stock count, what you are planning to count, when you plan to undertake the stock count, what tools and equipment you need and the timescale allotted. For example, if you are counting at height you will need to ensure the safety of the warehouse staff. If you are using forklift trucks a suitable safety cage needs to be provided. Under certain health and safety legislation and company rules the use of cages on forklift trucks are deemed unacceptable and therefore specialist equipment is required such as elevated work platforms (cherry pickers). Prior to the start of the count ensure that all items have been put away in their correct location and try to despatch as many items as possible prior to the stock take. Secondly, ensure that any obsolete units are disposed of before the start of the count. There is no point in counting stock that shouldn't be in the warehouse.

Some companies will affix a different coloured label on pallets during each year's count. One way of identifying non-moving or slow-moving stock is to look for the labels from the earliest stock count. In the past we have identified stock items that have gone through a significant number of counts and the pallets or cartons have never moved. It is normal to have a counter and a checker for each section if you are using a paper-based system. If you are scanning locations and products, one person per section should be sufficient. An auditor is likely to be present during a full count to make random checks of locations to verify the count is accurate. In order to complete a full stock count in the shortest possible time to minimize disruption to sales, companies will inevitably use staff who are unfamiliar with the products. As these counts normally take place at weekends or over the Christmas and New Year vacations, their motivation to do a thorough job might also be

suspect. Where there are a significant number of locations and a number of open cartons and individual items to be counted, it is likely that additional staff will need to be employed from agencies to assist in the count to ensure it is completed in time. However, completion on time is rarely the case as the number of discrepancies can take days to resolve. As a result, operations resume so as not to let customers down but this tends to compound the problems. This is why a number of companies are turning to cycle counts as opposed to full-blown stock counts. Outside agencies who are experienced in stock counts can be employed as an alternative but can be expensive and the issue of product familiarity is also a factor. Any discrepancies between the system figures and the count figures should be checked immediately by a supervisor and this continues until you arrive at two matching figures, be they the last two counts or the count and the system figures. The likelihood of finding the reasons for a discrepancy are low as a year's transactions have passed through the warehouse since the last count. The root cause of discrepancy is seldom discovered and as a result cannot be eliminated. With a paper system it is usual to provide staff with details of locations and product codes but with the quantities removed. Quantities are written on the sheets together with any changes to the product codes and other comments such as damages are recorded. This can lead to further inaccuracies as the administration staff try to decipher each person's writing whilst typing the results into a spreadsheet or database. This system of counting is fraught with problems and if agreed by auditors a perpetual inventory counting system should be introduced to replace the single annual count. In terms of performance measures companies need to record the number of errors found, not the difference in monetary value as this can hide a number of problems. A difference of a few hundred dollars may seem acceptable; however, there could be hundreds of errors within the system such as the following:

- products in incorrect locations;
- too many items of one product; and
- too few items of another product.

These may balance out but they need to be logged, measured and corrected before operations recommence.

Security

Security of product within the warehouse is paramount. The warehouse manager is responsible for the integrity of all the products under his or her care, whether they are owned or stored on behalf of other companies as a third party contractor. This can be achieved through good housekeeping, the use of security cages and carousels for storage, and through vigilance by staff. Poor security costs companies in lost inventory, higher insurance premiums and personnel turnover. Loading docks and platforms tend to be the most vulnerable areas – they're very easy places for a thief to remove stolen property, often in partnership with an outsider, a delivery driver for example. Security systems tend to be designed to protect your facility from people breaking in – but many thefts are perpetrated from within. Closed-circuit television at strategic points throughout the warehouse is a significant deterrent; however, unannounced inspections and walkabouts are also effective and much cheaper. With regard to the loading bays, one common-sense recommendation is that you separate them from employee parking areas, making it much more difficult to remove items from the warehouse. Searches on entry and exit, whether instigated by staff or by a random system of lights, is also very effective. Not only is product security important but also the protection of data. WMSs hold a large amount of sensitive data that needs to be protected. Internally this can be done through the use of password protection for different access levels and firewalls for external protection. The data needs to be backed up daily and the backup files stored offsite. Protecting data from being stolen or copied is also paramount. Equipment such as servers, computers and laptops

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need to be protected. These items need to be locked with key or code access, and personal computers need to be password protected and those passwords changed regularly. The core attributes of security within a warehouse are as follows:

- appropriate recording of inbound and outbound products;
- authorizations for all despatches;
- accurate audit trails;
- regular stock checks;
- the use of appropriate storage equipment; and
- vigilance.

Despatch

The order cycle time or lead time from order receipt to despatch is continually shortening and there is increased pressure on the warehouse manager to coordinate all activities to ensure that product is despatched on time and complete.

Packing – pieces/items/eaches

Once product has been picked there is the question of how it is packaged for despatch. As previously discussed, with individual order picks the operator may well package the product immediately, attach shipping labels and where required insert despatch documentation and invoices. This reduces the number of touch points in the warehouse but does take the operator away from the prime task of picking. Where there is the possibility of damage in transit, material can be added to the carton such as polystyrene and foam pellets, shredded paper, corrugated paper, air-filled bags, etc. This again increases time at despatch and puts the onus on the customer to dispose of the excess packaging on receipt. Where possible this material needs to be recyclable. The use of carton erectors which cut the cardboard to fit the contents is one way of overcoming this problem. The trade-off here is the cost of the machine versus the labour and material cost of doing it manually and the cost to the customer. If orders are required to be checked on despatch this is an ideal time to add the paperwork and affix labels. In terms of checking, items can be removed from the pick container, checked against the order and returned to the original carton or if the order was picked into a tote it can be transferred to a shipping carton. Other methods of checking include weighing the carton and comparing this weight with a system generated weight. This is preferable, providing the information held in the system is 100 per cent accurate. This also reduces the labour required in this area and assists with load planning. The need to check every order before it leaves the warehouse may well be a requirement for very high value products and products such as pharmaceuticals but I have to question the need to check every despatch order when it comes to other products. Companies need to measure the accuracy performance of their pickers and base the amount of checking on this figure. A picking team that is constantly achieving > 99.9 per cent accuracy requires minimum checking. Random checks will suffice. Where there is a drop in accuracy the amount of checking can be increased for a time but so should the training of the operators until the accuracy is restored. There is a trade-off here between the cost of the operators who are checking every order and the overall cost of mis-picks. There is no point in spending £20,000 ($31,400) on a checker per annum to save £3,000 ($4,710). The introduction of automation into this area of the warehouse enables companies to use equipment to automatically insert paperwork into a shipping container, attach a lid and label it correctly.

Packing – cartons

Full carton despatch is somewhat easier to manage. Individual cartons may require the attachment of a shipping label which may be generated from the WMS or from a carrier system such as those operated by UPS, Fed Ex, USPS and the Royal Mail. In terms of multiple carton dispatch, firstly there is a need to establish whether it is more cost effective to despatch via a parcel network or a pallet distribution or LTL carrier. This will decide the means of shipment – loose cartons or a palletized load. If palletized, the decision here is how to stabilize the cartons on a pallet for despatch. Many companies will use stretchwrap to do this. Some companies will stretchwrap manually whilst others utilize an automatic stretchwrap machine. The trade-off here is the cost of the machine versus the cost of labour and the reduction in the use of stretchwrap material. Velcro has introduced pallet straps to secure cargo. These are more environmentally friendly than stretchwrap but there is the added complication of tracking and returning the straps for reuse. The use of returnable packaging is also growing under environmental pressure. The use of plastic totes and pallets, slipsheets and collapsible cages is growing; however, there is a trade-off here between the initial cost of these items and the cost of returning them to the shipper versus the cost in money and environmental terms of cardboard packaging and one-way pallets.

Loading

The efficient loading of containers and trailers is crucial in today's environment of rising fuel prices. Unused space is inefficient and can cost a company a great deal of money. Efficient loading of vehicles and containers begins with the initial packaging of the products. Companies need to ensure that the outer packaging of their products is designed to fit perfectly onto the pallets used for both transportation and storage. The ideal is to ensure no overhang whatsoever with a reduction in unused space. It also needs to be robust enough to travel. Pallet loads need to be configured to ensure that product damage is minimized, cubic capacity is fully utilized, load stability is ensured and the configuration is acceptable to the receiving location.

Fortunately, there is software available to not only assist with pallet configuration but also container and trailer loading. The software can optimize packing within a container and trailer, on a pallet and even within an individual carton. This sophisticated software optimization not only takes into account the cube of the products but also their load bearing strength and location within the container. The latter ensures ease of off-loading at the receiver with all the cartons from the same product line being located together. The software also ensures that lighter items are packed on top of the heavier items. Examples include Cube-master and Cube-Designer.

Documentation

Finally, despatch documentation and labelling needs to be completed to ensure compliance with customer requirements and government legislation. Different countries will have different requirements and these will also differ if shipments are within country or for export.

Any errors in the export paperwork can result in non-shipment, seizure, fines or delays. When shipping hazardous material, it is essential that products are labelled accurately and have the correct documentation. Typical despatch paperwork depending on ultimate destination includes the following:

- advanced shipping notice;
- manifest;
- shipping labels;

- Bill of Lading;
- commercial invoice;
- shipper's export declaration;
- export packing list;
- certificate of origin;
- export licence;
- inspection certificate; and
- insurance certificate.

As mentioned above each country will have its own requirements in respect of the documentation needed.

Role of the driver

In situations where companies operate with their own transportation there are no issues with what the driver's role is in the actual loading process. However, when third-party contractors are used there is the age-old dilemma of what to do with the driver whilst the loading process takes place. Some companies insist on the driver assisting with the loading and checking the contents of the load, whilst other companies have health and safety issues with external staff being on the loading bay. If the latter is the case then the driver has to be accommodated elsewhere, preferably not in his cab. The possibility of the driver moving off the despatch bay whilst the vehicle is still being loaded is just as real. There is also the question of what the driver should sign for once the vehicle has been loaded. If he has not seen the products loaded onto the vehicle and the vehicle has been sealed prior to leaving the despatch bay, then it is reasonable to suggest that he is at liberty to sign the document and preface it with the word 'unchecked'. A time limit needs to be agreed in terms of how long the collecting company has to report any discrepancies. If the vehicle is sealed, the seal number needs to be recorded on the delivery paperwork and any other relevant documentation such as hazardous data sheets handed to the driver.

Summary and conclusion

This chapter has examined replenishment, value-adding services, support functions and despatch. We have already suggested that both receiving and picking are crucial roles; however, within the warehouse, the above operations are no less important. Well-timed replenishment will ensure an efficient pick operation whilst a timely and accurate despatch ensures that customer lead times are achieved or at times surpassed. The warehouse's ability to undertake value-adding services enables the manufacturer to postpone certain activities until the order arrives, resulting in fewer stock codes, and it enables retailers to transfer activities from the retail store back to the warehouse, freeing up valuable sales time. Stock counting and security are fundamental to the integrity of products stored in the warehouse and are crucial to maintaining credibility whether an in-house or outsourced operation.

References

1. ATAXANOV, R. (2021). FARGONA VODIYSI QORAKALPOGLARY ZAMONAVIY KIYIMLARIDAGI ANANAVIY ZHIHATLAR. www.fdu.uz. _
2. ATAXANOV, R. (2022). Chorvador khalqlar ananaviy moddiy madaniyatining airim zhihatlari (Fargona vodiysi korakalpoqlarining ananaviy taomlariga oid materiallarr tahlili) .

3. Atakxanov, R. S. (2021). Karakalpaks of the fergana valley: migration and integration processes. ACADEMICIA: An International Multidisciplinary Research Journal, 11(5), 586-596.
4. Sotvoldievich, A. R. (2021). Farg‘ona vodiysi qoraqalpoqlarida oilaga oid an’ana va marosimlar: An’ana va zamonaviylik. Web of Scientist: Xalqaro ilmiy tadqiqot jurnali , 2 (05), 747-755.
5. Атаханов, Р. С., & Ахунов, М. А. (2023). КАРАКАЛПАКЫ ФЕРГАНЫ: В ПРОШЛОМ И НАСТОЯЩЕМ (анализ полевых исследований). Journal of new century innovations, 12(1), 82-90.
6. Sotvoldiyevich, A. R. (2021). Dafn marosimi bilan bog'liq oilaviy marosimlar (Farg'ona vodiysi qoraqalpoqlari misolida). Berlin tadqiqotlari Transmilliy fan va gumanitar fanlar jurnali , 1 (1,5 Pedagogika fanlari).
7. Атаханов, Р. С. (2023, March). ФАРҒОНА ВОДИЙСИ ПОЛИЭТНИК ТАРКИБИНИНГ ШАКЛЛАНИШИДА МИГРАЦИЯ ЖАРАЁНЛАРИНИНГ ТАЪСИРИ. In *Proceedings of International Educators Conference* (Vol. 2, No. 3, pp. 27-31).
8. Атаханов, Р. С. (2023, March). ТРАДИЦИОННОЕ ХОЗЯЙСТВО КАРАКАЛПАКОВ ФЕРГАНСКОЙ ДОЛИНЫ. In *Proceedings of International Conference on Modern Science and Scientific Studies* (Vol. 2, No. 3, pp. 105-109).
9. ATAXANOV, R. (2023). FARGONA VODIYSI POLIETNIK TARKIBINING SHAKLLANISHIDA MIGRATION ZHARAYONLARINING TASIRI.
10. Атаханов, Р. (2022). МАТЕРИАЛЫ К ИССЛЕДОВАНИЮ ПОХОРОННО-ПОМИНАЛЬНОЙ ОБРЯДНОСТИ КАРАКАЛПАКОВ ФЕРГАНЫ: ТРАДИЦИИ И ИННОВАЦИИ (НА ОСНОВЕ ПОЛЕВЫХ ИССЛЕДОВАНИЙ). *Вестник Ошского государственного педагогического университета имени А. Мырсабекова*, *2*(2), 24-31.
11. ATAXANOV, R. (2022). QORAQALPOQ FARG'ONASI DANOS VA JANOS MARASYONLARINI O'RGANISH UCHUN MATERIALLAR: urf-odatlar va yangilanishlar (DALA TADQIQOTLARI ASOSIDA). O'sh davlat pedagogika universiteti . https://doi.org/https://doi.org/10.56122/..v2i2.18
12. Sotvoldievich, A. R. (2022). TRADITIONAL FISHING ACTIVITIES OF KARAKALPAKS IN FERGANA VALLEY (Field Ethnographic Data Analysis). Spectrum Journal of Innovation, Reforms and Development, 3, 246-249.
13. Рахимов, А. Ю., Абдурахмонов, А. А., & Сулаймонов, Ш. А. (2015). Изучение состояния использования ваты-сдира и пути повышения качества коконного сырья. Журнал научных публикаций аспирантов и докторантов, (4), 152-157.
14. Abdurashid, A. (2023). Efficient Method Of Biogas Production. Eurasian Journal of Engineering and Technology, 17, 28-34.
15. Abdurakhmonov, A. THE CONCEPT OF NATURE AND HEROES IN “ROCKS ALSO CRY”. EPRA International Journal of Multidisciplinary Research (IJMR), 1, 481.
16. Abdurakhmonov, A. A., & Dadabayeva, N. A. PREVENT SERIOUS INFECTIOUS DISEASES AND THEIR SPREAD PRECAUTIONARY MEASURES.
17. Tursunov, X. T., & Rahimova, T. U. (2006). Ekologiya.

18. Jalilovna, Q. N., Rustamjon o'gli, Y. D., Xosiljon o'g'li, M. J., & Isroiljonovich, I. O. (2021, January). HIMOYA GAZLARI MUHITIDA PAYVANDLASHDA MEHNAT MUHOFAZASI. In Archive of Conferences (Vol. 13, No. 1, pp. 47-48).

19. Yusupov, I. I., Qobulova, N. J., Xojiev, A. A., & Vaxobov, A. (2020). TO REDUCE GLOBAL CLIMATE ISLAND FOCUSED LOCAL COOPERATION. Theoretical & Applied Science, (11), 501-507.

20. Кобулова, Н. Ж., & Нарзиев, Ш. М. (2021, December). ХОДИМЛАРНИНГ МЕҲНАТИНИ МУҲОФАЗА ҚИЛИШ САМАРАДОРЛИГИНИ ОШИРИШ ЙЎЛЛАРИ. In Здравствуйте, уважаемые участники международной научной и научно-технической конференции, дорогие гости (p. 485).

21. Кабулова, Н. Ж. (2020). Традиционно-национальный узбекский головной убор мужчин (тюбетейка-дуппи) ферганской долины. Universum: технические науки, (8-2 (77)), 10-12.

22. Матрасулова, Н. И. (2022). СОСТАВ И СОРБЦИОННЫЕ СВОЙСТВА НАТУРАЛЬНОГО ШЕЛКА. ТЕСНика, (1 (9)), 11-14.

23. Qobulova, N. J., Abdumutalibov, J., & Akbarov, A. (2022). ISHLAB CHIQARISH KORXONASIDA MEHNAT XAVFSIZLIGINI BOSHQARISH TIZIMI (MXBT) NI TAHLILI. Theoretical aspects in the formation of pedagogical sciences, 1(6), 218-223.

24. Кабулова, Н. Д., Ходжакулов, М. Н., & Рахимов, Д. Б. (2021). АКТУАЛЬНОСТЬ ИСПОЛЬЗОВАНИЯ ПРОГРАММНОГО ОБЕСПЕЧЕНИЯ (ПОИСКОВО-ИНФОРМАЦИОННАЯ КАРТОГРАФИЧЕСКАЯ СЛУЖБА, ГЕОЛОКАЦИЯ) В ПОДРАЗДЕЛЕНИЯХ МИНИСТЕРСТВА ПО ЧРЕЗВЫЧАЙНЫМ СИТУАЦИЯМ РЕСПУБЛИКИ УЗБЕКИСТАН. Universum: технические науки, (7-1 (88)), 14-17.

25. Халматов, М. М., Исмаилходжаев, Б. Ш., Кабулова, Н. Ж., & Хусанов, Д. Д. (2021). ГЕОФИЗИЧЕСКОЕ МОДЕЛИРОВАНИЕ РАСПРЕДЕЛЕНИЯ АТМОСФЕРНЫХ ЗАГРЯЗНИТЕЛЕЙ В АНДИЖАНЕ НА ОСНОВЕ УРАВНЕНИЙ АЭРОДИНАМИКИ. Universum: химия и биология, (6-1 (84)), 30-34.

26. Goto, N., Shibata, Y., Rahmatillayev, J., Qobulova-tfd, N., Atajonova, S., Turg'unova, N., & Toxirov, A. Xorijiy hamkorlar ishtirokida o 'tkazilgan Respublika ilmiy-amaliy anjumani to'plamining TAHRIR XAY'HATI.

27. Jalilovna, K. N., & Sattarovna, J. M. (2022). Procedure for Investigation and Accounting of Accidents in the Process of Activity in Production. *European Journal of Life Safety and Stability (2660-9630)*, 200-204.

28. Бекташев, И. Б., Юсупов, К. А., Жуманова, М. С., Юлдашева, Г. Т., & Мухтаров, З. М. (2020). ОСОБЕННОСТИ АНТИБАКТЕРИАЛЬНОЙ ТЕРАПИИ ТУБЕРКУЛЕЗА ЛЕГКИХ У ВИЧ-ИНФИЦИРОВАННЫХ БОЛЬНЫХ. Форум молодых ученых, (12 (52)), 80-84.

29. Maxsudaxon, J. (2022). PROCEDURE FOR INVESTIGATION AND ACCOUNTING OF ACCIDENTS IN THE PROCESS OF ACTIVITY IN PRODUCTION. Universum: технические науки, (6-6 (99)), 48-50.

30. Kuchkarova, C. H., Nizamova, U. S., Abdullaev, S., & Madrakhimova, G. A. (2019). The High Water Plants Water Road in Cleaning. Annual Research & Review in Biology, 1-5.

31. Kuchkarova, C. H. (2019). NATURAL DISTRIBUTION OF THE ALGAE PLANT OF THE TREATMENT OF TELEAROSOVODIS, SYSTEMATIC PLACE AND SEPARATE BIOLOGICAL FEATURES. Central Asian Problems of Modern Science and Education, 4(2), 117-124.
32. Yo‘ldashev, A., & Jalilov, A. (2022). FAVQULODDA VA EKOLOGIK OFAT HOLATLARIDA KORXONALAR BOSHQARUVI. Eurasian Journal of Social Sciences, Philosophy and Culture, 2(13), 269-275.
33. Jalilov, A. (2022). MODEL FOR IDENTIFICATION AND ANALYSIS OF PROBLEMS IN THE ACTIVITIES OF OFFICIALS OF THE NATIONAL ACTION AND MANAGEMENT CENTER. Science and Innovation, 1(7), 286-294.
34. Yo‘ldashev, A., & Jalilov, A. (2022). FAVQULODDA VA EKOLOGIK OFAT HOLATLARIDA KORXONALAR BOSHQARUVI. Eurasian Journal of Social Sciences, Philosophy and Culture, 2(13), 269-275.
35. Jalilov, A. (2022). MODEL FOR IDENTIFICATION AND ANALYSIS OF PROBLEMS IN THE ACTIVITIES OF OFFICIALS OF THE NATIONAL ACTION AND MANAGEMENT CENTER. Science and Innovation, 1(7), 286-294.
36. Jalilov, A. (2022). FAVQULODDA VAZIYATLAR VAZIRLIGINING FAVQULODDA VAZIYATLARDA HARAKAT QILISH VA BOSHQARISH MILLIY MARKAZI MANSABDOR SHAXSLARI FAOLIYATIDAGI MUAMMOLI MASALALARNI ANIQLASH VA TAHLIL QILISH MODELI. Science and innovation, 1(C7), 286-294.
37. Jalilov, A. (2023). «FVHQ VA BMM TIZIMINI TAKOMILLASHTIRISH MODELI». © ООО «МОЯ ПРОФЕССИОНАЛЬНАЯ КАРЬЕРА»
38. Jalilov, A., Нилуфар, К., & Xalmatov, M. (2023). WAYS TO IMPROVE THE EFFECTS OF HEAVY METALS IN THE ATMOSPHERE ON LANDSCAPE TREES AND SOILS. © ООО «МОЯ ПРОФЕССИОНАЛЬНАЯ КАРЬЕРА».
39. Jalilov, A., & JALILOV, A. (2022). O’zbekiston respublikasi atrof-tabiiy muhit va ekologiyaning yomonlashuvi bilan bog’liq favqulodda vaziyatlarning oldini olish muammolari.