мицелиалды саңырауқұлақтар – *Alternaria* және саңырауқұлақ – *Saccharomyces,* картоп үлгілерінде: бактериялар – *Azotobacter, Micrococcus, Pseudomonas, Bacillus, Acidominococcus,*және мицелиалды саңырауқұлақтар – *Botrytis,Alternaria* және саңырауқұлақ – *Saccharomyces.* Бұдан басқа, п.«Тассай» үлгілерінен осы кезеңде қосымша келесі микроорганизмдер анықталды. Сәбіздің «Шантенэ» сорты: ашытқылар – *Phaeococcus, Torulopsis, Rhodotorula, Schizosaccharomyces,* белокочанды орамжапырақтың «Ташкентская» сорты: бактериялар – *Enterobacter* және ашытқылардан – *Deborymyces, Schizosaccharomyces,*картоп үлгілерінің «Тохтар» сортында белгілі болды: бактериялар – *Pseudomonas* және ашытқылар - *Phaeococcus, Torulopsis, Rhodotorula, Schizosaccharomyces, Criptococcus;*«Аксор» сортында бактериялар – *Micrococcus, Pseudomonas,* ашытқылар – *Phaeococcus, Torulopsis, Rhodotorula, Criptococcus;* Осы уақытта п. «Қайнар» алып келінген үлгілерде қосымша орамжапырақтарда *Rhodotorula* ашытқылары, «Аксор» және «Тамыр» сорттарынан *Debaromyces, Torulopsis, Rhodotorula, Criptococcus* ашытқылары және мицелиалды саңырауқұлақ - *Monillia* анықталды.

Аналитикалық зерттеулердің нәтижесінде әдебиеттермен анықталғандай, *Pseudomonas* туысының микроорганизмдері картоптың «Ылғалды шірік» ауруының этиологиясына қатысатындығы, ал *Bacillus* бактерияларымен біріксе сәбіз және қызанақта аналогиялық ауруларға себеп болады. *Corynebacterium* туысының бактериялары орамжапырақтарда «Сақиналы шірік» ауруына қатысады. *Fuzarium* туысының бактериялары сәбіздің «Фузариозды құрғақ шірік», ал *Botrytis* – «Сұр шірік» ауруларына себеп болады. Демек, микробиологиялық ластанудың мониторингін жүргізуде зерттелетін көкөніс үлгілерінде аталған микроорганизмдердің

Осы мәліметтерді негізге алып, микробиологиялық тұрғыдан қауіпсіз және сапалы көкөністік өнім алудаолардың микрофлорасын анықтау үшін мониторингтік зерттеулер жүргізілуі керек. Өйткені корсетілген микрооганизмдер тағамдық өнімдерді дайындауда сақталуы мен қауіпсіздігіне әсер етеді.

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В данной статье представлены результаты по идентификации наиболее часто встречающихся микроорганизмов в стадии хранения овощных культур таких, как картофель, капуста и морковь.

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In given article are presented results on identifications of most constantly meeting microorganisms to stages of cultivation of vegetable cultures, in particular a potato, cabbage and carrots.

L. Damdinsuren, Ts. Selenge, D. Tsend-Ayush

MEAT VALUE CHAIN ANALYSIS,RENEWAL STRATEGYIN MONGOLIA

(Mongolian University of Science and Technology)

Mongolia besides fully supplying its population's meat demand, it also has 30-40 thousand ton of meat reserve annually, other value added products of butchering, total of 100 million USD export products, also meat processing and exporting experiences [1]. Therefore guaranting pastoral Mongolian meat's value, informing international market, improving value added meat and meat products export has important significance in Mongolian meat industry, stock raising and its veterinary development. Mongolia has enough meat reserve and its law, legal environment, state policy and strategy have been basically defined to support and develop meat market. Mongolian meat market analysis results have been united and completed in SWOT analysis, and some strategy-suggestions have been promoted for value chain's renewal.

Key word:SWOT, production, supply, export, market

Preface

Mongolia supplies 8,2 million head of stock annually which is 223,1 thousand ton of meatfor its population's meat demand, and even though it is capable of exporting 30-40 thousand ton of meat and meat products annually, its average annual meat export is 16-18 thousand ton[3]. One of progresses which occured in meat export is mutton and goat meat's export increase, total of 28,9thousand ton meat has been exported in 2010, and 41.7% is held by this progress. In 2010 stock meat, gut and byproducts export has exceeded by 1.5 times comparing with last year[4, 5].

In order to renew meat value chain wholly in Mongolian domestic market, reliable chain of supply with stock origin, meat, product's veterinary hygiene, sanitary fully guaranteed product is "*hersmen-stock preparers-meat factory-specialized trade units"* and further it is possible to implement food safety control's ISO 22000 standard in every participant's activity of this chain[2,3].

1. Meat value chain analysis

According to Mongolian state constitutional law,stock is under government protection, according to Food law meat is "*strategically important product*" and that is why government is implementing "*Mongolian stock*", "*Food safety*"etc national programs and steps to perfect meat value chain in orderto protect stock health, support meat production and export. Mongolian`s meat market survey's result has been united and analyzed with SWOT(Table 1).

Table 1

Meat value chain SWOT analysis

Advantage	**Opportunity**
Meat general reserve is sufficient, meat product need is stable, according to Mongolian state law meat is a strategically important product; Mongolian government, administration, international organizations, donor countries are implementing plans and projects to improve stock origin and breed, fight infectious and non-infectious stock diseases, support meat production and export. Foreign market agree that pastoral stock meat is better than farm stock in nutritive biological significance and its usagecharacteristics.	Implement law of agricultural originated goods and product exchange, "*Mongolian stock*", other plans and projects,also increase factory processed meat amount; Increase production of value added product from 1 stock and increase cost chain participants' revenue Develop veterinary, meat processing factory, trade, logistical enterprises' collaboration and cooperation, occupy stable place in foreign market with meat and meat production, food and nutritional products and technical products.
Disadvantage	**Danger and risk**
Meat processing factory's marketing control is unsatisfactory and current asset is not enough; Do no fully consider foreign market requirementsfor meat processing technology renewal.	High possibility of natural and climatic unpleasant phenomenon and catastrophe; Underestimate Mongolian stock and meat's value, block from entering foreign market, preparing meat in illegal way and exporting has increased recently.

Within government policyframe to improve herdsmen's living standard and develop agro-business chain "*Agricultural originated goods and product exchange law*", "*Mongolian stock*" and other programs have been implemented and this provides opportunity to increase production of value added product from 1 stock, increases revenue of value chain participants, improves cooperation and collaboration of veterinary, meat processing factory, trade and logistical units, occupies stable rank in foreign market with meat, meat products, food and nutritionaltechnical goods.

Meat value chain renewal goal and implementing strategy, result data have all been defined based on SWOT analysis (Table 2).We have selected 2 factors which shows stock production, supply stages, value chain's internal factor's advantages and disadvantages, 2 factors of external factor's decent environment's, and also 2 main factors ofadverse environment. Out of 4 internal factors in stock production, supply stages and value chain, the most influencing factor is dealer's chain (33,4%), and meat butchering hygiene condition (26,5%). However the most influencing external factor is herd structure(47,3%), investment and loan origin (28,3%)(Figure 1).CI describes value's reality compatible condition's index, and CRdescribes its compatible condition's ratio. When CR<0.1 it is seen as value has reached compatibility. Meat production, supply's internal factor is CR=0,024, external factor is CR=0.057 so it fulfills requirements.

Agricultural originated goods, establish herdsmen accomplice who will participate in product exchange activity, level up its activities, provide value added meat and product for export, considering population's purchase ability locate low price product's meat factory, explore new power, implement technological renewing programs etc matters needs to be settled.

Table 2

Meat value chain's SWOT analysis matrix

Internal factors		External factors	
Advantage (S)	**Disadvantage (W)**	**Decent condition (O)**	**Adverse condition(T)**
One. Meat production, supply stages, value chain			
1.Meat reserve, need 2.Production capacity	3.Hygiene 4.Dealers chain	1.Government support 2.Investment, loan origin	3.Law and business environment 4. Herd structure

Internal factors' valuation matrix

	1	2	3	4	PV		
1.	**1**	1	3	0,33	0,247024		
2.	1	**1**	1	0,33	0,153274	λmax	4,066719
3.	0,33	1	**1**	3	0,264881	CI	0,02224
4.	3	3	0,33	**1**	0,334821	**CR**	**0,024711**
	5,33	6	5,33	4,67	1		

External factors' valuation matrix

	1.	2.	3.	4.	PV		
1.	**1**	0,33	1	0,33	0,122024		
2.	3	**1**	3	0,33	0,282738	λmax	4,154268
3.	1	0,33	**1**	0,33	0,122024	CI	0,051423
4.	3	3	3	**1**	0,473214	**CR**	**0,057136**
	8	4,67	8	2	1		

SWOT matrix

	IC	EC
Current	-0,248	-0,261
2015	0,003	0,014
2021	0,245	0,247

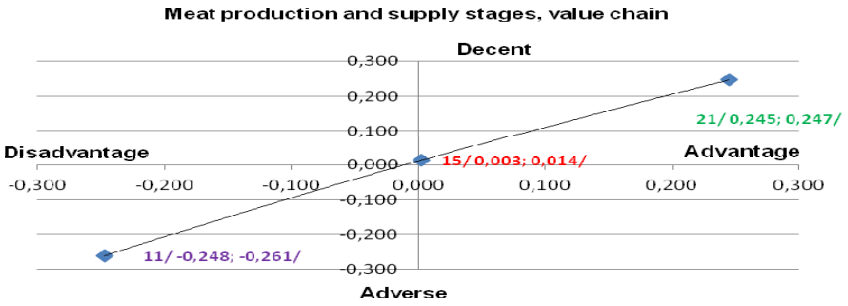

Figure 1. Meat value chain factors influencing amount

2. Value chain's renewal strategy

Renewal's strategical tendency that is based on meat value chain's results aim to overcome consequences and based on this sector's internal environment's advantages use external environment's pleasant opportunities in short time, weaken non-pleasant influences in medium term, remove its disadvantages in medium term, also improve its weak point in dangerous conditions(Table 3).

Table 3

Meat value chain's SWOT analysis result, strategy tendency

SO-based on this sector's advantages use external environment's pleasant opportunities: Short-term strategy	WO – by improving sector's disadvantages use external environment's pleasant opportunities: Medium-term strategy
- Let herdsmen's group and accomplice develop into agricultural unit's exchange participant, let "dealers" get involved in stock preparing and	- Receive stock, drive herd to factory, determine pastoral and herd driving road; - Advertise pastoral stock meat's nutritional and

supply chain; - Grant current asset loan to meat processing factories, establish price and reward structure based on stock quality and hygiene index; - Based on renewal of meat factory's technology, stock reserve and population settlement implement new factories building activity in Agricultural master plan frame.	biological advantages, expand foreign channels, receive foreign consulting service in order to increase value added meat and meat products, technical and nutritious goods export; - Meat value chain participants need to get certificated training in stock and meat preparing and supply, its storage, sales hygiene
ST – based on sector's advantages use overcoming opportunities of external environment's non-pleasant influence: Medium-term strategy	WT –by improving its weak point in sector's external environment's non-pleasant condition and overcome its consequences: Long-term strategy
- Extend processing factory's seasonal work through feeding out stock, storing meat, meat and bone flour, other types of fodder, stock raising utility's production etc, approve and support help suggestionsfor herdsmen; - Improve soum's veterinary, processing factory's hygiene control-rating laboratory's ability	- Establish "Meat" complex and cluster in stock reserve territory; - Implant meat value chain's good agricultural practice (GAP, GMP, GLP), danger analysis, critical point control structure (HACCP), and ISO 22000 standard; - Establish "Organic Mongolian meat", "Mongolian sheep gut" brands, government and private sectors and implement it together.

Strategy tendency will develop herdsmen's group and accomplice into agricultural exchange participant in short time, let "dealers" get involved in stock preparing and supply chain, grant current asset loan to meat processing factories, establish price and reward structure based on stock quality and hygiene index, based on technology renewal, stock reserve and population settlement implement new factories building activity in Agricultural master plan frame, extend stock preparing and meat production's seasonal work in medium term, approve and support help suggestions for herdsmen, improve soums' veterinary and processing factory's hygiene and control-rating laboratory's ability, establish "Meat" complex and cluster in stock reserve territoryin long term, implant meat value chain's good agricultural practice(GAP, GMP, GLP), danger analysis, critical point control structure (HACCP) and ISO 22000 standards, establish "Mongolian organic meat", "Mongolian sheep gut" brands and set its implementing goals.

Under unified goal to increase Mongolian organic meat, meat originated value added other products' export, producer and government needs to implement special program(Figure 2).

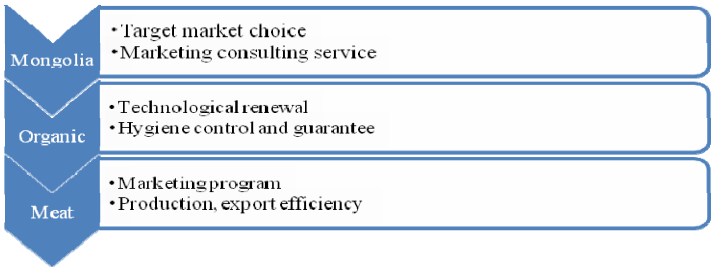

Figure 2. Organic meat, goods, product export's increasing tendency

In order to improve stock preparing and supply, set hygiene proper habit in meat production and sales chain, standard implementation, provide product safety, improve local control and laboratory capacity, producers have been doing lot of work. Keep hygiene good agriculture practice(GAP, GHP, GMP, GLP)in meat value chain's every stage, provide safety, execute local control, danger analysis, critical point control structure (HACCP), needs close collaboration between EU and other international organization in order to conduct ISO 22000 international safety control standard in food chain. This will become fundament for Mongolian stock and meat production to enter non-traditional foreign market.

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С. Дэлгэрмаа, Ц.Цэрэндулам

БИОЦИДНОЕ ДЕЙСТВИЕ ЭКСТРАКТОВ РАСТЕНИЙ НА РАЗЛИЧНЫЕ ВИДЫ МИКРООРГАНИЗМОВ

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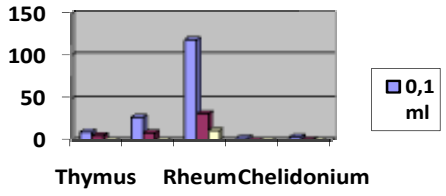
В настоящее время для защиты текстильных и ковровых материалов от биоразрушения под действием различных видов микроорганизмов применяются разные способы защиты. Одним из таких способов является использование при крашении волокон экстрактов растений, обладающих бактерицидным действием.

В нашей стране такой способ обработки является новинкой, поэтому на пути его внедрения в практику у нас возникают различные трудности. Прежде всего это связано с изучением химического состава веществ, которые содержатся в наземных частях растений и оказывают биоцидное действие. Поэтому для своей исследовательской работы мы выбрали пять наиболее распространенных растений, которые могут содержать вещества, задерживающие рост микроорганизмов.

Цель работы – изучение антимикробного действия экстрактов растений и выявление химических веществ, содержащихся в них.

В качестве объектов исследования мы выбрали ревень ***(Rheum undalatum L.)*,** тимьян **(*Thymus dahurica L*.)**,** подорожник **(*Plantago major L.*)**,** чистотел **(*Chelidonium majus L.*)**,** крапиву **(*Urtica dioica L.*)**,** которые произрастают повсеместно на территории нашей страны.

Для работы мы приготовили 30%, 60%, 96%-ные спиртовые экстракты данных растений. Из этих экстрактов 0.1 мл, 0.5мл, 1мл суспензий вносили в расплавленный и охлажденный до 45^{o}C питательный агар /мясо-пептонный агар/, который затем разливали в стерильные чашки Петри. После остывания на поверхности питательной среды делали посев трёх различных видов микроорганизмов – кишечной палочки *E.coli*, споровой бациллы *Bacillus*, плесневого гриба *Penicillum*. Данные микроорганизмы культивировали при температурах 37^{o}C /*E.coli*/ и 27^{o}C /*Bacillus, Penicillum*/. После культивирования проводили подсчёт колоний данных микроорганизмов. При этом обнаружено, что с повышением концентрации экстракта в питательной среде число колоний микроорганизмов уменьшается. При объеме 1 мл 96% спиртового раствора растений рост кишечной палочки совсем прекращается, а количество колоний других двух микроорганизмов уменьшается в 5 раз /график 1, 2/.



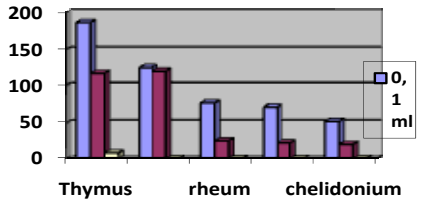


График 1. Изменение числа колоний *E.coli /60%* экстракт растений График 2. Изменение числа колоний плесневого гриба /60% экстракт растений/

Как видно из графиков, при увеличении объема суспензии экстрактов растений в питательной среде число колоний в чашке Петри резко уменьшается. При объеме 1 мл суспензии культура кишечной палочки не дает роста, а число колоний гриба в питательной среде с тимьяном уменьшается с 188 до 8.

Для выявления различных химических соединений в данных растворах мы проводили тонкослойную хроматографию. Для этого сначало мы фракционировали эти растворы в разных органических растворителях: хлороформе, этилацетате, и брызгали раствором Драгендорфа. При этом