

АННОТАЦИИ

УДК 631.58:631.5

Черенков А. В., Шевченко М. С. Зернобобовые культуры – стратегический фактор регулирования белкового баланса и плодородия почв.

Ключевые слова: зернобобовые, соя, севообороты, удобрения, гумус, урожайность, структура посевов.

Освещены проблема производства зернобобовых культур в степной зоне Украины и перспективы развития отрасли на основе инновационных средств и технологий. Рассмотрены пути оптимизации структуры посевных площадей бобовых культур, установлена их роль в регулировании плодородия почв и повышении продуктивности сельскохозяйственных животных. Приведены модели севооборотов с элементами биологизации при насыщении бобовыми культурами. Внесены предложения относительно комплексного развития отрасли зернового производства. – С. 5–11.

УДК 338.432:631.1:633.1(251.1:477)

Рыбка В. С., Компаниец В. А., Кулик А. А., Ковтун Е. В. Экономические и организационно-технические предпосылки развития зернопроизводства в зоне Степи Украины в контексте инновационных процессов.

Ключевые слова: зерновые культуры, интенсификация, продуктивность, производственные затраты, себестоимость, цена, прибыль, экономическая эффективность.

Приведены результаты анализа уровня развития зернопроизводства в степной зоне Украины и определены основные приоритеты повышения его эффективности в условиях перехода на инновационную модель развития АПК. – С. 11–17.

УДК 577.2:633.15

Дзюбецкий Б. В., Сатарова Т. Н., Черчель В. Ю., Дяченко Т. А., Гончаров Ю. А. Содержание каротиноидов в зерне линий кукурузы.

Ключевые слова: кукуруза, селекция, самоопыленная линия, каротиноиды, β -каротин, зерно.

Определено содержание каротиноидов в зерне кукурузы по β -каротину в зависимости от генетического происхождения селекционного материала. Приведена сравнительная характеристика этого показателя в зерне селекционно-перспективных линий кремнистого, кремнисто-зубовидного и зубовидного подвидов.

Идентифицированы линии (ДК2323, ДК44, МС814, ДК2442 и др.), которые имеют более высокое содержание каротиноидов и могут служить донорами этого признака отдельным группам. Для них реализуется программа улучшения кукурузы. – С. 18–22.

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Циков В. С., Дудка Н. И., Шевченко А. М., Носов С. С. Эффективность внекорневой подкормки кукурузы микроэlementными препаратами совместно с азотным минеральным удобрением.

Ключевые слова: кукуруза, микроэlementные препараты, биометрические показатели, жаростойкость, структура урожая, урожайность зерна, влажность зерна.

Приведены результаты экспериментальных исследований по определению эффективности применения микроэlementных препаратов для внекорневой подкормки кукурузы, установлено их действие на биометрические показатели, жаростойкость и продуктивность растений. Выявлены наиболее эффективные из них по влиянию на структуру урожая, урожайность и влажность зерна. – С. 23–27.

УДК 633.11«324»/«321»:631.524.84(251.1-17:477)

Гирька А. Д. Особенности реализации потенциала продуктивности сортов пшеницы озимой и яровой в северной Степи Украины.

Ключевые слова: пшеница озимая и яровая, сорт, климат, зерно, урожайность.

Приведены результаты анализа наличия сортовых ресурсов и урожайности зерна различных сортов пшеницы озимой и яровой в опытах по экологическому испытанию в зависимости от меняющихся гидро-термических условий. Выделены сорта, характеризующиеся стабильной реализацией генетического потенциала в широких пределах варьирования среднесуточных температур воздуха и условий влагообеспеченности. – С. 27–30.

УДК 633.16 «324»:631.816.12

Ткалич И. Д., Сидоренко Ю. Я., Бочевар О. В., Ильенко А. В., Кулик И. А., Мамедова Э. И. Продуктивность ячменя озимого - двуручки при осеннем и весеннем севе в зависимости от обработки семян и фона питания.

Ключевые слова: ячмень озимый - двуручка, срок посева, предпосевная обработка семян, минеральные удобрения, урожайность зерна.

Приведен анализ элементов продуктивности растений ячменя озимого - двуручки сорта Достойный при посеве осенью и весной, предпосевной обработке семян рострегулирующими и микроэlementными препаратами на разных фонах питания. Установлено, что урожайность ячменя озимого - двуручки при посеве в весенний период была меньше на 40–79 % в сравнении с осенним периодом. – С. 31–35.

УДК 633.11 "324": 633.112.9 "324":631.5: 57.014

Солодушко Н. Н., Гасанова И. И., Прядко Ю. Н., Носенко Ю. М. Урожайность и качество зерна пшеницы и тритикале озимых в зависимости от предшественников и сроков посева.

Ключевые слова: пшеница и тритикале озимые, сорт, срок посева, предшественник, урожайность, качество зерна.

Рассмотрены особенности формирования урожайности и качества зерна сортов пшеницы Селянка, Смуглянка, Зира и тритикале Папсуевская озимых в зависимости от сроков посева после черного пара и подсолнечника в условиях северной Степи. – С. 35–39.

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Молдован Ж. А., Собчук С. И. Влияние сроков посева, густоты растений и абиотических факторов на формирование урожайности зерна гибридов кукурузы различных групп спелости в условиях Лесостепи западной.

Ключевые слова: кукуруза, гибриды, сроки посева, густота растений, урожайность зерна.

Приведены результаты исследования особенностей формирования продуктивности гибридами кукурузы различных групп спелости в зависимости от сроков посева и густоты стояния растений. Установлено положительное влияние смещения сроков посева в сторону более ранних, в сравнении с традиционными для региона, на формирование урожайности зерна. Определена густота стояния растений, которая обеспечивает максимальное повышение урожайности зерна гибридов кукурузы в условиях Лесостепи западной. – С. 39–45.

УДК 631.82.02:633.853:631.5

Коньк Г. С., Лыхочвор А. Н. Урожайность рыжика по сравнению с яровыми масличными культурами.

Ключевые слова: рыжик, яровые масличные культуры, урожайность, качество, экономическая эффективность.

Установлено, что самая высокая урожайность среди исследуемых яровых культур была у рапса ярового – 2,45–2,50 т/га, рыжика – 2,16–2,25 т/га и льна 2,18–2,23 т/га. Высоким содержанием масла характеризуется лен – 51,5 %, горчица сарептская – 45,8 % и рыжик – 44,3 %. Лучшие показатели экономической эффективности получены при выращивании рыжика и льна: прибыль составляет 21750 и 21450 грн, уровень рентабельности – 181 и 179 %. – С. 46–49.

УДК 633.11«324»:631.5:631.4

Гирька А. Д., Бокун А. И., Винюков А. А., Ищенко В. А., Гирька Т. В. Влияние систем обработки почвы и посева озимой пшеницы на агрофизические свойства и питательный режим почвы.

Ключевые слова: пшеница озимая, обработка почвы, посев, продуктивная влага, элементы питания.

Представлены результаты производственной проверки и внедрения систем обработки почвы и посева пшеницы озимой. Определены особенности агрофизических свойств, динамику влагообеспечения и питательного режима почвы под влиянием исследуемых факторов. – С. 49–53.

УДК 633.11“324”:632.4

Педаш Т. Н., Горциар Е. А. Распространенность и развитие корневой гнили пшеницы озимой в условиях северной части Степи Украины.

Ключевые слова: корневые гнили, пшеница озимая, распространенность, развитие болезни, предшественники, сорта, возбудители.

Изложены результаты мониторинга пораженности посевов пшеницы озимой корневой гнилью в Днепропетровской области. Определено, что распространенность и развитие болезни определенным образом зависят от предшественников, сорта, погодных условий. – С. 54–58.

УДК 633.11.111:631.53.04

Усова Н. Н. Влияние сроков посева на урожайность и качество зерна пшеницы озимой в условиях южной Степи Украины.

Ключевые слова: пшеница озимая, сорта, сроки посева, урожайность, содержание белка и клейковины, качество зерна.

Приведены результаты многолетних исследований реакции сортов пшеницы озимой на сроки сева в

условиях южной Степи Украины. Установлена тенденция к снижению урожайности зерна при смещении сроков посева как в сторону ранних (5 сентября), так и в сторону поздних (5 октября) в сравнении с оптимальными. – С. 58–62.

УДК 631.512.631.582.631.8

Артеменко С. Ф., Ковтун Е. В. Продуктивность сои в зависимости от разных доз удобрений и основной обработки почвы в севооборотах короткой ротации.

Ключевые слова: соя, дозы удобрений, предшественник, урожайность, севооборот, короткие ротации.

Приведены результаты исследований выращивания сои в севооборотах короткой ротации при внесении различных доз минеральных удобрений и основной обработки почвы в условиях недостаточного увлажнения в северной Степи Украины. Целесообразным есть переход к внесению уравновешенных доз удобрений на фоне чизельной глубокой обработки почвы с эффективной системой защиты посевов от сорняков. – С. 62–66.

УДК 631.527.5:635.67

Климова О. Е. Дивергентность линий сахарной кукурузы, созданных при использовании образцов экзотической зародышевой плазмы.

Ключевые слова: кукуруза сахарная, селекция, линии, признаки, дивергентность, источники, продуктивность, элементы структуры.

Освещены результаты исследований инбредных линий кукурузы сахарной, созданных при включении в их родословные образцы экзотической зародышевой плазмы различного ботанического состава и географического происхождения. Экспериментально была установлена высокая дивергентность новообразованных генотипов по проявлению морфологических признаков. Анализ данного материала в контрастных условиях гидротермического обеспечения 2014–2015 гг. выявил линии-источники хозяйственно-ценных признаков с максимальным уровнем их воспроизводства, что расширяет и обогащает генетический базис гетерозисной селекции кукурузы сахарной. Их использование обеспечит синтез высокопродуктивных и конкурентоспособных гибридов разнообразного технологического использования с высокой сахаристостью зерна, обусловленной специфическими мутантными генами биосинтеза углеводов. – С. 66–73.

УДК 633.16:631.8

Заець С. А. Продуктивность ячменя озимого в зависимости от видов азотных удобрений и подкормки.

Ключевые слова: ячмень озимый, аммиачная селитра, карбамид, КАС, триходермин, урожайность, экономическая эффективность.

Приведены данные эффективности применения различных видов азотных удобрений на ячмене озимом при выращивании после стерневого предшественника в условиях южной Степи. Установлено, что предпосевное внесение аммиачной селитры, карбамида и КАС в дозах 30 кг/га д. в. и биопрепарата триходермин (5 л/га) в смеси с 20 кг/га карбамида обеспечило одинаковую урожайность, которая соответственно составляла 4,29; 4,27; 4,28 и 4,29 т/га. Наибольшую урожайность (5,40 т/га) ячмень озимый после стерневого предшественника обеспечивает при внесении смеси биологического препарата триходермин (5 л/га) с карбамидом (20 кг/га) до посева и подкормки рано весной аммиачной селитрой в дозе N₃₀. При этом получен наибольший экономический эффект – условная чистая прибыль составляла 7786 грн/га при уровне рентабельности 150 %. – С. 73–79.

УДК 632.5:574

Гаврилюк Ю. В. Присутствие сорняков рода *Cuscuta* в культурфитоценозах Луганской области.

Ключевые слова: сорняки-паразиты, сорняки, культурфитоценозы, повилка полевая, повилка клеверная.

Приведены результаты исследований разных культурных растительных групп с целью установления уровня засоренности их сорняками-паразитами рода *Cuscuta*. Определено, что исследованные виды хорошо существуют, паразитируя на сорняках, которые произрастают в прилегающих к полям культурфитоценозах. – С. 79–81.

УДК 633.15:631.53.026

Кирпа Н. Я., Кулик В. А. Энергосберегающие приемы в технологиях сушки семян кукурузы.

Ключевые слова: тепловая сушка, сушилка камерная, энергосберегающие приемы, качество семян, посевные и урожайные свойства.

Приведен анализ известных приемов энергосбережения в процессе сушки семян кукурузы в камерных кукурузосушилках типа СКП. Это прогревание початков, параллельная продувка камер, дифференцированный тепловой режим, максимально допустимая температура, реверсирование и рециркуляция теплоносителя, двухстадийный способ сушки. Определено принципиально новое направление энергосбережения за счет использования топлива растительного происхождения. – С. 82–87.

УДК 631.58:631.582:631.51

Шевченко М. С., Десятник Л. М., Шапка В. П., Кохан А. В. Влияние элементов биологизации на продуктивность севооборотов и плодородие почвы в Степи.

Ключевые слова: системы земледелия, биологизация, севообороты, урожайность, продуктивность севооборотов, плодородие почвы.

Изложены результаты исследований научными учреждениями НААН Украины основных путей биологизации земледелия в зоне Степи – усовершенствование севооборотов, системы удобрения почвы, минимализация обработки, применение почвозащитной системы обработки почвы с целью увеличения производства высококачественной конкурентоспособной продукции при условии сохранения плодородия почвы. – С. 88–96.

УДК 633.15:632.954

Федоренко Э. Н., Алдошин А. В., Кравец С. С., Бернацкий М. М. Особенности применения почвенных гербицидов при производстве семян гибрида кукурузы ДН Акватор и его родительских компонентов.

Ключевые слова: кукуруза, родительские компоненты, полевая всхожесть, почвенный гербицид, доза внесения.

Установлена специфическая реакция семян родительских компонентов гибрида кукурузы ДН Акватор на внесение почвенных гербицидов. Установлены конкретные гербициды и дозы их применения для каждого из родительских компонентов: ♀ Крос 371 М стерильная и ♂ ДК 680МВ3С. Разработаны рекомендации по применению почвенных гербицидов на участках гибридизации кукурузы ДН Акватор. – С. 96–98.

УДК 633.174:631

Яланский А. В., Серeda В. И. Сорго – экономико-энергетический ресурс для производства биотоплива.

Ключевые слова: сахарное сорго, селекция, гибрид, гетерозис, стерильные аналоги, фертильные линии, биоэнергетика.

Освещены преимущества сахарного сорго как биоэнергетической культуры при создании стабильной сырьевой базы. Приведены технологии выращивания этой культуры. Оценены перспективные гибридные комбинации сахарного сорго: А 326 × Карликовое 45, Низкорослое 81с × Силосное 42 (Крипт), ДН 71с × Карликовое 45 (Феникс), Кафрское кормовое 186с × Силосное 42 (Ананас), которые характеризуются улучшенными морфологическими, урожайными и биохимическими свойствами по сравнению с сортом-стандартом Силосное 42. Лучшие гибридные комбинации сахарного сорго – ДН 71с × Карликовое 45 (Феникс), Кафрское кормовое 186с × Силосное 42 (Ананас) и Низкорослое 81с × Силосное 42 (Крипт) находятся в Государственном сортоиспытании. – С. 99–103.

УДК 633.15:631.52

Беликов Е. И., Куприченко Т. Г. Перспективные гибриды лопающейся кукурузы.

Ключевые слова: гибрид, лопающаяся кукуруза, урожайность, коэффициент увеличения объема, попкорн.

Приведены результаты селекции новых гибридов лопающейся кукурузы за период 2013–2015 гг. Показано, что по сумме рангов лучшим был гибрид ДН Циклон с урожайностью зерна 3,44 т/га и коэффициентом увеличения объема при взрывании 34,6. Выделено перспективный гибрид ДН Карамель с шарообразным типом взрывания и коэффициентом увеличения объема 33,2. – С. 103–107.

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Бенда Р. В., Бондаренко А. С., Шевченко А. М., Федоренко И. Е. Анализ научно-технического и инновационного потенциала Днепропетровской области.

Ключевые слова: научно-технический, инновационный потенциал, научные разработки, внедрение, организации, предприятия.

Приведен анализ состояния научно-технического и инновационного потенциала Днепропетровской области. Особое внимание сосредоточено на его основных составляющих: кадрах, финансах и структуре организационной работы. Определены особенности инновационного развития экономики Днепропетровщины. – С. 107–111.

УДК 636.22.28

Козырь В. С., Коваленко В. П., Геккиев А. Д. Практические основы контроля и управления селекционными процессами в животноводстве.

Ключевые слова: порода, популяция, стадо, селекция, оценка, управление.

Обобщены принципы генетического мониторинга для оценки микроэволюционных изменений в популяциях, использование которых положительно влияет на эффективность управления селекционными процессами в животноводстве. – С. 112–115.

УДК 636.4.082.43: 085.5

Агапова Є. М., Сусол Р. Л., Халак В. І. Влияние пола молодняка свиней на их откормочные и мясные качества в зависимости от уровня обеспеченности сырым протеином рационов.

Ключевые слова: молодняк свиней, пол, откормочные качества, протеиновое питание, рацион, половой диморфизм.

Повышение уровня сырого протеина в рационах кормления молодняка свиней крупной белой породы создаваемого заводского типа «Причерноморский» способствует улучшению всех откормочных и мясных качеств молодняка обеих полов по сравнению с контрольной группой умеренного протеинового питания.

С позиции полового диморфизма можно отметить, что хрячки более требовательны к уровню протеинового питания – аминокислотному составу. При снижении уровня сырого протеина наблюдается нарушение отдельных биологических закономерностей роста свиней, прослеживается тенденция к проявлению лучших откормочных качеств у свинок по сравнению с хрячками. – С. 116–119.

УДК 636.2.085.13

Димчя Г. Г., Майстренко А. Н. Уровень протеина в рационе телок и эффективность его использования.

Ключевые слова: кормление, рацион, протеин, телки, прирост, живая масса, конверсия, эффективность.

Изложены результаты исследований эффективности использования сырого протеина телками украинской красной молочной породы при выращивании их с 7 по 15 месяц, установлен уровень его конверсии в белок прироста при нормировании основных питательных веществ в рационе по разным нормам. За период опыта в контрольной и опытной группе коэффициент конверсии протеина в среднем составлял 0,17 и 0,137 соответственно. Имела место тенденция к снижению его значений по мере увеличения возраста телок. – С. 119–122.

УДК 610:636.2-591.471.3-591.414

Гаврилин П. Н., Гаврилина Е. Г. Концептуальные аспекты неонатологии продуктивных животных.

Ключевые слова: неонатология, продуктивные животные, органы кроветворения и иммунной защиты.

Определены концептуальные подходы к решению проблемы получения здоровых новорожденных продуктивных животных в условиях интенсивного антропогенного воздействия. Установлены основные факторы, влияющие на жизнеспособность животных на третьем этапе доместикации. Во-первых, это развитие «конфликтной» ситуации между популяцией животных и средой обитания, результатом чего являются необратимые отрицательные изменения статуса обеих сторон (снижение жизнеспособности, нарушение экологического баланса); во-вторых, это нарушение барьерной системы плаценты, увеличение ее проницаемости, сопровождающееся существенными изменениями морфогенеза органов кроветворения и иммунной защиты плодов. Решение этой проблемы заключается в коррекции существующих промышленных технологий животноводства с учетом биологии одомашненных видов, особенностей их исторического и индивидуального развития. – С. – 122–125.

УДК 636.2.082.453.5

Козирь В. С., Буров В. А. Вагинально-продолгованный метод осеменения коров и телок.

Ключевые слова: корова, искусственное осеменение, оплодотворяемость, вагинально-продолгованный метод.

Разработан и внедрен принципиально новый метод искусственного осеменения коров и телок, который базируется на использовании специальной пипетки с капилляром. Метод позволяет повысить оплодотворяемость животных в сравнении с ректо-цервикальным осеменением на 10 %. – С. 125–127.

УДК 636.2.082:575.827

Гиль М. И., Коваленко В. П. Мониторинг генофонда молочного скотоводства Украины и методы ускорения пороодообразования в нем.

Ключевые слова: методы оценки признаков, генофонд, племенная работа, молочный скот, генетико-селекционные мероприятия, теория пороодообразования.

Выполнен анализ основных направлений по усовершенствованию селекционно-племенной работы в отрасли молочного скотоводства и приведены концептуальные положения научно-практической деятельности основных специалистов отечественной и мировых научных школ. Освещена проблема целесообразности переосмысления традиционных методов с целью ускорения пороодообразовательного процесса и создания высокопродуктивных стад скота. – С. 127–133.

УДК 636.2.033 (477)

Угнивенко А. Н., Гуменний В. Д., Остапенко А. И. Пути решения проблемы производства говядины в Украине.

Ключевые слова: мясное скотоводство, племенное скотоводство, высококачественная говядина, природные пастбища, культурные пастбища, энергия кормов.

Бюлетень Інституту сільського господарства степової зони НААН України № 11, 2016 171

Население Украины обеспечить говядиной соответственно медико-обоснованным нормам возможно разведением крупного рогатого скота мясных пород в товарных стадах. – С. 133–139.

УДК 636.4.082.43

Козирь В. С., Халак В. И., Зельдин В. Ф., Чернявский С. Е., Чегорка П. Т. Оценка эффективности разных методов разведения свиней.

Ключевые слова: свиноматка, хряк-производитель, генотип, метод разведения, воспроизводительная способность, оценочный индекс, изменчивость, корреляция.

Приведены результаты исследований воспроизводительной способности свиноматок крупной белой породы при использовании чистопородного разведения и промышленного скрещивания с хряками породы ландрас и генотипа «Оптимус».

Установлено, что использование хряков-производителей породы ландрас положительно влияет на повышение многоплодности свиноматок крупной белой породы (на 0,4 поросенка) и массу гнезда на время отлучения (на 5,1 кг). Высокая достоверная корреляционная связь существует между индексом Лаша в модификации М. Д. Березовского, многоплодностью свиноматок ($r = +0,745 - +0,929$) и массой гнезда на время отлучения ($r = +0,855 - +0,941$).

Максимальную прибавку продукции получено от совмещения свиноматок крупной белой породы и хряков-производителей породы ландрас и генотипа «Оптимус» – 6,53–11,52 %, что в расчете на 1 голову составляет 137,70 и 256,50 грн соответственно. – С. 140–143.

УДК 636.2.087.72

Голушко О. Г., Надаринская М. А., Козинец А. И. Рациональное использование сапропеля в кормлении высокопродуктивных коров.

Ключевые слова: высокопродуктивные коровы, живая масса, удой, сапропель, кормление, кормовые добавки, биохимические показатели сыворотки крови.

Статья посвящена изучению использования кормовой добавки «Агропродукт», состоящей из жмыха рапсового и сапропеля, на молочную продуктивность коров.

Научно-хозяйственный опыт был проведен в РДУП «ЖодиноАгроПлемЭлита» Смолевичского района Минской области на двух группах высокопродуктивных коров чёрно-пёстрой породы в основную стадию лактации. Животных подбирали с учётом возраста, живой массы и удою за последнюю законченную лактацию по принципу пар-аналогов (средняя живая масса – 550 кг, в каждой группе по 12 голов). Различие в кормлении состояло в том, что 1 контрольная группа получала комбикорм со жмыхом рапсовым без сапропеля, 2 опытная – комбикорм с кормовой добавкой «Агропродукт». Продолжительность предварительного периода составляла 10 дней, опытного – 93 дня.

Опыты показали, что использование добавки кормовой «Агропродукт» в составе комбикормов для лактирующих коров взамен аналогичного количества по массе рапсового жмыха способствует повышению содержания в нем минеральных веществ и витаминов, положительно влияет на молочную продуктивность коров. Скармливание лактирующим коровам в составе комбикорма добавки кормовой «Агропродукт» привело к снижению затрат кормов на производство 1 кг молока на 6,0 %, что способствует получению прибыли от одного опытного животного в размере 335 тыс. руб. за счет разницы в стоимости реализованной продукции, полученной за период исследований без учета затрат на производство. Дополнительная прибыль от 1 коровы опытной группы за период исследований составила 147 тыс. руб. – С. 144–151.

УДК 636.237.1.082.14.[4777/251.1]

Пищан И. С. Адаптация и потери продукции швицкими коровами разного экологического происхождения на крупном промышленном комплексе в зоне Степи Украины.

Ключевые слова: швицкая порода коров, лактация, сервис- и межсотельный периоды, надой, падение надоя, бесплодие, индекс адаптации.

Изложены материалы исследований адаптации, функциональной активности лактирующего организма и потери продукции коров швицкой породы австрийской и местной интродукции в условиях промышленной технологии эксплуатации в зоне Степи Украины.

Доказано, что функциональная активность лактирующего организма у швицких коров австрийского экологического происхождения выше, чем у коров местной интродукции. Так, у подопытных коров швицкой породы I группы удой, который приходится на одни сутки межсотельного периода, составляет 28,4 кг, у коров II группы этот показатель меньше на 10,94 % и составляет в среднем 25,6 кг, у коров III (контрольной) группы он составляет 21,3 кг и уступает значению аналогов I группы на 33,33 % ($P < 0,001$).

Установлено, что 17,6 % швицких первотёлок оплодотворяются в течение первых 110 суток после отела. Это свидетельствует о недостаточной адаптационной пластичности молодых коров к условиям эксплуатации на промышленном комплексе. – С. 151–159.

УДК 636.014:636.4

Бордун А. Н., Халак В. И., Грабовская А. С. Влияние различных факторов на выживаемость и оплодотворяющую способность спермы хряков-производителей.

Ключевые слова: хряки, сперма, температура, охлаждение, эквilibрация, криоконсервация.

Приведены результаты исследований влияния различных факторов на выживаемость и оплодотворяющую способность спермы хряков-производителей с целью раскрытия определенных закономерностей механизма замораживания и размораживания для оптимизации процесса длительного хранения спермиев хряков.

Установлено, что время инкубации свежеполученной спермы хряков при комнатной температуре 1,5 часа положительно влияет на качество размороженной спермы хряков. Использование скорости охлаждения 1 °С/мин. в температурном диапазоне от 15 до 5 °С не приводит к достоверному снижению показателей качества спермиев хряков после размораживания. Увеличение скорости охлаждения снижает продолжительность технологической обработки спермы для криоконсервирования с 180 до 10 мин. При 3-часовой эквilibрации спермы хряка удалось получить высокие показатели активности спермиев – 46,7%. – С. 159–163.

УДК 619: 616.993.192.1: 635.5

Маршалкина Т. В., Сентюрин В. В. Биология кишечных паразитов кур и индеек в условиях Степи Украины.

Ключевые слова: эпизоотология, гельминтозы, эймериозы, экстенсивность, интенсивность, смешанная инвазия, куры, индейки.

Приведены данные собственных исследований распространения гельминтозов и эймериозов кур и индеек в хозяйствах разной формы собственности степной зоны Украины в 2014–2015 гг. Определены особенности течения инвазий в зависимости от времени года, вида и возраста птицы. Установлен видовой состав возбудителей паразитарных болезней и основные ассоциации паразитов. – С. 163–166.

ANNOTATION

UDC 631.58:631.5

Cherenkov A. V., Shevchenko M. S. Leguminous are strategical factor of regulation of protein balance and fertility of soils.

Key words: leguminous, soybean, crop rotation, fertilizers, humus, crop capacity, structure of sowings.

In the Institute of Grain Crops it was determined that biologization of agriculture, in particular, including of leguminous in crop rotation and use the biological remains, sidental cultures and other organic components in system of fertilizing influences well on saving of soil fertility.

Leguminous are favorable predecessor for winter wheat, one of the components of this phenomenon is leguminous enriching upper part of root containing layer of soil by good absorbing forms of nitrogen only on a third less than a field of black pair considering the best predecessor for wheat it does.

By foddering to animals 1 kg of wheat one may receive 950 g of milk, 24 g increase of living mass of pigs and 19 g increase of cattle; 1 kg of peas – 268 g of milk, 61 g increase of pigs and 50 g increase of cattle. So, grain of soybean is the most biological valuable (for an account amino acid composition), peas takes second place and wheat as fodder has the less nourish value.

Today one may to attain the high results thanks balans between technological link and corresponding genetic potential of leguminous sorts and hybrids only. In view of condition of problem of production of leguminous one can state that in this branch still remains non-use reserve of their productivity and the level of considerable improvement of role of ecological regulator is not attained.

By placement of soybean in short rotation crop rotation filling of crop rotations by crops of this culture had not very great influence on the level of its crop capacity. So, by 25 % filling by soybean of 4-field crop rotation on the bachground of optimal variant of fertilizing crop capacity of soybean was 2,3 and 2,38 tonn per hectare, the same crop capacity was by 50 % filling by soybean of other 4-field crop rotation (2,33–2,38 tonn per hectare). At the same time, by 50 % filling by soybean of 2-field crop rotation (soybean – maize) soybean crop capacity somewhat lower (2,22 and 2,26 tonn per hectare), analogous occurence was observe by 33 % filling by soybean of 3-field crop rotation, especially on the background of chisel tillage.

Investigated systems of soil tillage haven't sufficiently expressed difference in influence on crop capacity of soybean, only insignificant tendency to somewhat higher level of yield on the background of plow system of soil tillage (in limits an error of the experiment) was noted.

Greater increase by foddering and grain units from use of microbial preparations one received by organic and mineral fertilizing system, and it put together 0,29 tonn per hectare (5,3 %) and 0,29 tonn per hectare (4,7 %).

Greater increase after the output of digestible protein in grain-pair-cultivating crop rotation with use of microbial preparations was in variants organo-mineral system of fertilizing and without fertilizers – 0,04 tonn per hectare.

Positive balance of humus in soil one may rich without application of mineral fertilizers. The mail elements of such renewal system are doing up vegetable remains in soil, after-harvesting and pair siderates and introduction in crop rotation two assimilative leguminous peas and soybean. By this use the straw and large-stem remains 3 tonn per hectare in combination with oil retish 1,8 tonn per hectare in form of green mass like an organic fertilizer quarantees equivalent of manure 12 tonn per hectare and annual increase of containing of humus on 0,015 %.

Comparison of effectiveness of fertilizing in crop rotation consarning influence on agricultural cultures crop capacity shows high ability consarning quarantee of high productivity. In this case the model of biological agriculture on the basis of use of organic material in form of vegetable remains and siderates appeared the most perspective one in conditions of deficite of traditional organic fertilizers. – P. 5–11.

UDC 338.432:631.1:633.1(251.1:477)

Rybka V. S., Kompaniets V. O., Kulyk A. O., Kovtun O. V. Economic, organizational and technological preconditions for the development of grain production in the Steppe of Ukraine in the context of innovation processes.

Keywords: crops, intensification, productivity, production costs, cost, price, profit, economic efficiency.

Grain production is the leading branch of agriculture in Ukraine. Grain crops annually cover more than half of the total cultivated area. The technology of crops farming affect significantly the level of agrotechnics of other crops of agriculture and economic efficiency of the whole agricultural complex. Steppe zone occupies 40 % of the territory and has 32 % of the working population in rural areas of the state. Farms of the region produced 38,2 % of its total gross harvest in Ukraine on average in 2006–2015. Revenues of the group formed by grains of wheat (57,1 %), corn (20,6 %) and barley (17,2 %), which is generally 94,9 %.

Dynamics of indicators of profitability of production as grains in all as by types of crops during the last 10 years was characterized by substantial diversity caused as by dynamic changes of indicator of unit cost as price fluctuations on grain market.

The most profitable in the steppe zone of Ukraine for the last 10 years grain production were in 2011, 2014 and 2015 (24,5, 24,6 and 41,5 % respectively). The best of the profitability in 2015 was provided by the farm of Kirovograd

and Dnepropetrovsk regions (50,7 and 49,4 % respectively).

The high level of economic development of grain production is possible due to skilful search and timely and effective introduction of the new one instead of traditionally existing in all agricultural farms. Only continuous activation of innovative processes can provide optimum development of grain farming in the current conditions. The main thing is the restoration of progressive technologies of crops farming and wide use some of advanced agrotechnological developments in them. Activation of innovation in agricultural production has no alternative.

High potential of productivity and efficiency of grain production in the Steppe zone of Ukraine today can not be realized without farming of crops on intensive basis. This factor should be carried out not only by the quantitative increase resources but also based on the rational use them, namely optimization of nutrition regime and application of integrated plant protection from diseases, pests, modern high-productive machines and tools, timely and qualitative implementation of all technological operations.

Rational use of fertilizers is an important component of the system of measures enhancing of productivity and efficiency by cultivation of basic crops. They accounted about half of the received increment crop yield. But now the problem of rational use of fertilizers in the technology of crops farming had not solved. According to statistics, by the example of corn, application of fertilizers the average in the Steppe zone significantly decreased: fertilizers in a count on nutritives from 223 kg in 1990 to 62 kg in 2015 or 3,6 times and organic of in recent years almost do not applicate.

With a purpose of most economic and economical recouplement of fertilizers it is necessary to use them first of all under priority cultures, namely winter wheat, spring barley, corn. They accounted about half of the received increases of crop yield. It is necessary to optimize the doses of fertilizer depending on agrochemical condition of soils and biological characteristics of crops. These cultures provide the highest recouplement of 1 kg of fertilizers, it is 5–9 kg of grain units.

Priority importance attaches combined high-productive farm equipment which will provide simultaneous implementation of several technological operations in tillage, fertilizing and sowing of crops. Optimization of technical complex carries a reserve of increase of gross grain harvest in this region of 2–2,5 mln t primarily due to the accuracy and timeliness implementation of the technological operations of grain production. To reach the level of gross harvest of grain crops of 30–35 mln is necessary to process by herbicides 60–70 % of crops cereals cultures and 90 % of corn.

Harvest losses in the current state of weed-infesting of crops are 8–15 % for cereals cultures and up to 25–40 % for corn. To ensure grain production in the Steppe zone in a volume of 30,1 million tons need 65,69 milliard hrn. The largest share (26,5 %) accounted for costs of mechanized operations, fertilizers – 22,5 milliard hrn, (34,3 %) and pesticides – 6,1 milliard hrn (9,3 %).

Volumes of the resource providing of grain production in the zone of Steppe in a volume 30 million tonn make 66 milliards hrn at the prognosis level of profitability 46,7 % . – P. 11–17.

UDK 577.2:633.15

Dzubetsky B. V., Satarova T. M., Cherchel V. Yu., Dyachenko T. A., Goncharov Yu. O. Carotenoid content in grain maize lines.

Key words: maize, selection, inbred lines, carotenoids, B-carotene, grain.

The article is devoted to complex research of the carotenoid content, specifically that one of β -carotene, in promising maize inbred lines. The object of the research were 43 self-pollinated lines of maize (*Zea mays* L.) of different maturity and germplasm groups, developed by the Institute of Grain Crops of NAAS of Ukraine (Dnipro city). The study was conducted on a spectrophotometer at a wavelength of 450 nm using the method of extracting total carotenoids from maize.

Analysis of β -carotene content of specific inbred lines from samples of flint maize has showed fluctuations in values of β -carotene content from 1,87 to 5,21 mg/kg. The maximum value was observed in such inbred lines as DK204 /273, DK200, DK3472, DK9527 and only one of them (DK4538) had low level of total carotenoids.

In the group of inbred lines of semi-dentmaize a much greater variation range of β -carotene content was noted ($V = 23,2$ and $37,2$ % respectively). Index ranged from 2,28 mg/kg (inbred line DK2380) to 7,99 mg/kg (inbred line DK2323) and it is the highest level among all groups studied.

Among the inbred lines of dent type the highest level of fluctuations of index of β -carotene content was marked, as indicated by the coefficient of variation – 48,1 %. Within the group the value of β -carotene content varied from 1,45 mg/kg to 6,93 mg/kg. Inbred lines DK44 and MS814 were distinguished according to this index level, having reached the content of β -carotene in grain of 6,40 and 6,93 mg/kg respectively. The lowest value of the index was observed in inbred line DC2777 – 1,45 mg/kg.

Determining the average content of β -carotene in groups of inbred lines with different grain texture showed no significant difference between them by this index. However, there was a trend of increased level of β -carotene in group of flint inbred lines and its decline during the transition to dents. Thus, a group of flint inbred lines was characterized by the lower values of indices of variation of the trait by the utmost importances within group, by the scope of variation, by variance, as well as by the standard deviation and coefficient of variation compared to groups of semi-dent and dent inbred lines.

The study has established that such traits as the pedigree of breeding material, grain texture and growing season of plants do not play a significant role in the formation of total carotenoid content in maize. The authors have identified

inbred lines with high carotenoid content which can serve as donors of this trait to certain groups for which the programs of maize improvement are implemented. – P. 18–22.

UDK 633.15:631.5

Tsykov V. S., Dudka M. I., Shevchenko O. M., Nosov S. S. Effectiveness of corn foliar top dressing of microelement preparations together with the nitrogen mineral fertilizer.

Keywords: corn, microelement preparations, biometric indexes, heat -resistance, yield structure, grain yield, grain moisture.

It is not always possible to get high yield corn without basic mineral nutrition, which is as a rule carried out through the root system of plants. So it is best to apply fertilizer by placement in the soil. But sometimes in the process of growth and development of plants as a result of variation of hydrothermal indexes from the norm, there are situations when the plant organism is unable to provide themselves with sufficient amount of nutrients through the root system. In that case there is a necessity of fast correcting of quantity of nutritional elements and elimination of their deficiency.

With onset of the drought, the assimilation of mineral nutrients is greatly reduced, which in turn slows the growth and development of plants. Under these conditions, even at optimal quantity of available compounds of macro- and micronutrients in the soil their absorption by means of root system of plants is insufficient. Particularly strong decreases its ability to absorb macronutrients such as nitrogen, phosphorus and potassium. In this regard, the aqueous solutions of low concentrations of certain fertilizers may be applied to the surface of plants as nutrients so long as they can move in the plant organism from top to bottom. The extent and rate of absorption of nutritional elements with leaves of plants is much higher compared with the absorption of their root system from fertilizer applied in the soil. But the volume of nutrient absorption with leaves, unfortunately, is limited.

The preparative form particularly affects on the effectiveness of the micronutrients. It is widely known that the most is effective chelate form, that is organic form, when between microelement (preferably metal) and helating form (usually – an organic acid) there is some connection. Recently advance in popularity are getting the chelated microelement preparations, which are able to regulate plant growth processes, to increase their resilience to unfavorable hydrothermal conditions, to raise the level of grain yield and its quality indicators, in addition, they are ecologically friendly for the environment and human health.

The aim of the experimental work was to identify the efficiency and to develop the technological methods of use of microelement preparations in the form of foliar top dressing of corn plants.

Field research was carried out in the 2013–2015 at the Laboratory of agrobiological resources of maize and sorghum of State Enterprise Experimental Farm "Dnipro". The seeds of middle-early hybrid of corn Venzel were sown in the third decade of April, a way of sowing – single grain sowing with row spacing 70 cm. Preharvest stand density of plants amounted to 45 thousand / ha. Fertilizer background was natural. Spraying of corn plants was conducted in the phase of 5–6 leaves in accordance with the scheme of the experiment. Arrangement of variants was successive. Area of sown plot – 114,2 m², record plot – 76,2 m². Replication of test – three times. Observations and estimates were performed according to conventional fieldplot technique. Agrotechnics in the field experiment, in addition to the factors studied, was consistent with the general guidelines for growing corn in the northern steppe of Ukraine.

It was determined that biometric indexes of plants were the largest at application of microelement preparations Rozasil as well as Reacom-CP-maize together with the nitrogen fertilizer (carbamide). Increased heat resistance was observed in maize plants on the plots where spraying was carried out with preparations Quantum-maize, Anti-stress and Rozasil together with carbamide. The yield structure indexes reached the highest values by using preparations Rozasil, Quantum-Aquasil and Reacom-CP-maize together with the nitrogen fertilizer (carbamide). The yield of corn by 14 % moisture was highest at top-dressing of plants with preparations Nanomiks-maize and Rozasil together with carbamide. The cost of drying grain to standard moisture content depending on top-dressing of plants with different microelement preparations not significantly changed. – P. 23–27.

UDC 633.11«324»/«321»:631.524.84(251.1-17:477)

Gyrka A. D. Features of realization the productivity potential of winter and spring wheat varieties in northern Steppe of Ukraine.

Key words: winter and spring wheat, variety, climate, grain, crop yield.

The results of the analysis of available variety assortment and grain yields of different varieties of winter and spring wheat in the environmental crop variety testing, depending on the changing hydrothermal conditions are presented. Marked the varieties, which characterized by stable realization of genetic potential of grain yield in a wide range of variation of average air temperatures and conditions water provision. – P. 27–30.

UDK 633.16 «324»:631.816.12

Tkalich I. D., Sydorenko Yu.Ya., Bochevar O. V., Iliencko O. V., Kulyk I. O., Mamiedova E. I. Productivity of alternate barley at autumn and spring sowing time, depending on the seed treatment and nutrition background.

Keywords: alternate barley, sowing time, pre-sowing seed treatment, mineral fertilizers, grain yield.

In conditions of northern Steppe of Ukraine until recently has not been studied the basic agricultural measures of cultivation a winter barley, which can be sown in spring, making it impossible to produce scientifically based recommendations for technological measures of its growing and care of this crop at spring type of development. In

particular, until now it is poorly investigated the influence of sowing time, seed treatment and level of mineral nutrition on potential productivity of barley at autumn and spring sowing time.

The aim of our research was to determine the characteristics of growth, development and productivity formation of winter barley plant, which can be sown in spring depending on fertilization and pre-sowing seed treatment, growth regulators and other preparations at spring and autumn sowing, which has scientific and practical importance in the northern Steppe of Ukraine.

Researches were carried out in 2012–2014 in the laboratory of agrobiological resources of spring grain and leguminous crops at the Erastivska Experimental Station of Institute of Grain Crops of NAAS. Was used variety of winter barley (Dostoinyi) which can be sown in spring, and was sown after predecessor pea.

The highest grain yield (4,53–4,67 t/ha) was formed in variants at application of mineral fertilizers in a dose of $N_{60}P_{60}K_{60}$, and was for 0,97–1,18 t/ha higher compared to plots without fertilization and for 0,47–0,27 t/ha – than the background of $N_{30}P_{30}K_{30}$.

At the spring sowing of winter barley obtained the increase in yield, depending on seed treatment preparations were for 0,09–0,26 t/ha at the background without fertilizers. When applying fertilizer at doses $N_{30}P_{30}K_{30}$ and $N_{60}P_{60}K_{60}$ increase of yield from using treatment preparations accordingly made 0,21–0,29 and 0,19–0,47 t/ha compared to the control. Higher grain yield of winter barley in the case of spring sowing formed in variants with fertilizer at dose of $N_{60}P_{60}K_{60}$ and seed treatment anti-stress preparation – 3,45 t/ha, which is 0,46 t/ha more than in the control.

Grain yields of winter barley at the spring sowing mostly dependent on the dose of fertilizers. Increasing it to $N_{30}P_{30}K_{30}$ provided to increase the yield of grain for 0,34–0,50 t/ha, and the $N_{60}P_{60}K_{60}$ – to 0,59–0,86 t/ha compared with the background without fertilizers.

Analysis of the grain crop productivity showed that the yield of winter barley at spring sowing was lower by an average of 0,95–1,54 t/ha compared to the autumn sowing time.

Thus, obtained experimental material allows to state that pre-sowing treatment of winter barley seed by growth stimulating preparations and micro-fertilizers provided the necessary start growing of plants, improves the efficiency and productivity as in the case of the autumn and spring sowing time.

Planting of winter barley in the spring reduces the potential productivity of plants and grain yield compared with the autumn sowing time, but can be an important event for rapid breeding of seed culture in the case of plant death during the winter period. – P. 31–35.

UDK 633.11 "324": 633.112.9 "324":631.5: 57.014

Solodushko M. M., Gasanova I. I., Pryadko Yu. M., Nosenko Yu. M. Yield and quality of winter wheat and winter triticale, depending on predecessors and sowing time.

Keywords: winter wheat and winter triticale, variety, sowing time, predecessors, yield, grain quality.

In a Northern Steppe (Synelnykivska selection and research station of the Institute of Grain Farming) in 2009–2011 we compared the yield and grain quality of winter varieties, wheat – Selianka (Institute of Plant Selection and Genetics), Smuglianka (Institute of Plant Physiology and Genetics and Myronovskiy Institute of Wheat), Zira (Institute of Grain Farming) and triticale – Papsuyevska (Joint-stock company Science and production association "Stepova"). The above mentioned varieties grown by us after bare fallow and after sunflower.

The largest grain yield of winter wheat after bare fallow average over 2009–2011 formed by the optimum sowing time (September 20), the smallest grain yield – in admissible early sowing time (September 5). The grain yield of varieties depending on sowing time varied in the following ranges: Selianka – from 4,17 to 4,93 t/ha, Smuglianka – from 4,50 to 5,51 t/ha, Zira – from 4,41 to 5,26 t/ha. The largest grain yield of varieties of wheat after sunflower have been noted in permissible late sowing time (October 5), the least – by sowing time 5th September.

The highest grain yield after unfallow predecessor formed variety Smuglianka (2,97–3,31 t/ha); grain yield of variety Zira was 2,58–3,20 t/ha and variety Selianka – 2,55–3,14 t/ha.

The highest grain yield of winter triticale Papsuyevska after two predecessors was at the optimal sowing time. The absolute values of this indicator for all sowing times were lower than at winter wheat. Thus, the grain yield of triticale on the bare fallow depending on sowing time varied from 3,99 to 4,39 t/ha, and after sunflower – from 2,39 to 2,66 t/ha.

The significant difference was observed between the grain quality of wheat and triticale. Thus, after bare fallow on average over three years of research the volume-weight of wheat depending on varieties and sowing time was 779–799 g/l, and triticale – 724–731 g/l. After sunflower similar values for wheat varied within the limits 775–801 g/l, triticale – 731–738 g/l.

The highest protein content in grain of wheat and triticale on bare fallow have been noted with late sowing times. Similar patterns of relationship were observed in the formation in grain wet gluten. After sunflower more protein in the grain of winter wheat accumulated by early sowing time in which the grain yield was the lowest. The content of gluten after that predecessor suffered no significant changes depending on sowing time.

After bare fallow in the grain of winter wheat was 11,6–12,8 % protein and 23,9–29,9 % gluten, while after sunflower these indicators were respectively only 9,5–10,4 and 17,8–20,1 %. The content of protein and gluten in grain of triticale after bare fallow was respectively 12,0–12,7 % and 24,6–26,7 % and after sunflower – 10,1–10,4 % and 17,5–18,7 %.

Based on three years of observations in the grain of triticale compared with grain of wheat under the same growing conditions formed gluten with lower elasticity and flexibility.

This results from the fact that in triticale is present the genome of rye and in the composition of gluten of the culture is less glutenin. The varieties of winter wheat Selianka and Zira were better on indicators of sedimentation and baking quality after two predecessors.

It is noted lower sedimentation indicator and bread volume in triticale compared with wheat.

Thus, in the Northern Steppe higher grain yield is characteristic for winter cereal crops at sowing in optimal and acceptable later sowing time. The yield and quality of winter wheat and winter triticale after bare fallow substantially exceeds similar indicators after sunflower. Under the same growth conditions the quantity of protein and gluten in grain triticale is at the level of wheat, but the nature of grain, sedimentation, Index of deformation of gluten (IDK) and bread volume in grain triticale are significantly lower. – P. 35–39.

UDK 633.15:631.5

Moldovan J. A., Sobchuk S. I. Effect of sowing dates, sowing rates and abiotic factors on the formation of grain yield of corn hybrids of different ripeness groups in the conditions of forest-Steppe.

Keywords: corn, hybrids, sowing terms, sowing norms, personal productivity, productivity

The main problem with the cultivation of maize for grain hybrid selection, because of its precocity depends on the level of the final drying of grain after harvesting, and thus the economic efficiency of growing corn for grain. According to many theoretical and practical studies, the proportion of the influence of class in shaping the productivity is 50 %, agronomic practices (30 %) and climatic conditions – 20 %.

That is why the aim of our study was to investigate the effect of sowing dates and plant density on the formation of grain yield of corn hybrids of different ripeness groups in conditions of Western forest-Steppe.

Weather conditions in the years of research were characterized by significant increasing average air temperature and uneven rainfall during the growing season, and in 2015 a significant deficit.

By results of researches it is established that the efficiency of cultivation of maize hybrids of various ripeness groups largely depends on their genotipov reaction to sowing dates, etc.

The highest grain yield at the level of 8,21 t/ha, average for years of research, early maturing hybrid maize Kvitnevy 187 MV formed of sowing in the third decade of April with a seeding rate of 90 thousand. germinating seeds per 1 hectare. The Maximum increase of grain (0,79–1,29 t/ha or 12,5 to 20,3 %) in all sowing dates was obtained by increasing the seeding rate to 90 thousand. germinating seeds per 1 ha.

The highest grain yield middle-early hybrid corn Orzhytsia 237 MV also received the sowing in the third decade of April with a seeding rate of 90 thousand. germinating seeds per 1 ha of 8,91 t/ha. the Increase to the absolute control was 1,89 t/ha, or 26,9 %.

The maximum growth of the crop (0,90–1,06 t/ha or 13,2–14,1 percent) of grain mid-season corn hybrid name Galatea all sowing dates was obtained with the increase in seeding rate up to 85 thousand. germinating seeds per 1 ha. The Highest yield (8,63 t/ha) forms for early sowing (III decade of April) with a seeding rate of 85 thousand of viable seeds per 1 ha. Increase in absolute control in this case is 1,12 t/ha or 14,9 %.

Sowing of maize hybrid Krasilov 327 MV in the III decade of April ensured yield increase by 0,10–0,34 t/ha compared to the traditional timing, then as the shift in sowing dates to a later resulted in a decrease of yield indices 0,75–0,83 t/ha or 8,5–9,7 %. For all sowing dates, the maximum increase in yield (0,77–0,96 t/ha, or a 9,2–13,3 %) obtained with increasing seeding rate up to 85 thousand. germinating seeds per 1 ha.

Evaluation of the effect of weather conditions of vegetation period showed that in 2013 and 2014, the most favorable for the formation of seed yield of the studied hybrids of maize were early and traditional sowing terms, the least favourable – 2015. – P. 39–45.

UDK 631.82.02:633.853:631.5

Konyk G. S., Likhochvor A. M. False flax yield compared with spring oilseeds crops.

Key words: false flax, spring oil crops, yield, quality, economic efficiency.

False flax is more adaptive crop, compared with other oil crops of cabbage family, it provides a constant seed productivity in different soil and climatic zones. It hardly affected by pests and diseases and it can even inhibit some types of weeds, this is its advantage compared with other oil spring crops. Technology of false flax cultivation is much simpler than, for example, of rape.

Productivity of oil cruciferous crops depends on soil and climatic conditions, biological characteristics of crop, technology of cultivation. The growth and development of generative organs, pests and diseases of plants and yield quality depend on the choice of sowing dates. The density of plants standing affect the development of the root system, quantity of branches, plant pods, number of seeds considerable.

The purpose of researches is to compare the yield and quality of seed false flax with other oilseed crops. The scheme included the following crops and varieties false flax varieties Girskiy and Mirage, spring rape of Dobrobut and Ataman, white mustard varieties Carolina, New Brown mustard, radish Aisberg of Orfei oil varieties Ryduga and Zhuravka, flax oil varieties

The researches were conducted on farm Agro Express Service in Mlyniv district of Rivne region in the Western forest Steppe Zone. It should be known is dark-grey light loamy. The contents of humus in the arable layer is

2,1 % luzhnohidrolizovanoho nitrogen by Kornfildom – 101 mg/kg soil (low), mobile phosphorus – 243 mg/kg (high) and exchangeable potassium (by Chirikov) – 130 mg/kg (high) . The reaction of soil solution (pH – 6,0) is neutral.

It was established that the yield of oilseed crops is different under the same growing conditions. The lowest yield was obtained in two varieties of oil radish – 1,51–1,52 t/ha. As to the white mustard it was 1,58 t/ha, and brassica juncea – 1,69 t/ha, which is higher compared to oil radish by 0,18 t/ha or 12 %. Almost the same yield was of false flax and flax. As to the spring false flax varieties Girskiy and Mirage it was respectively 2,16 and 2,25 t/ha, but as to the varieties oil flax Iceberg and Orphei – 2,18 and 2,23 t/ha. The increase yield compared to oil radish in these two crops is 0,65–0,74 t/ha, or 43–49 %.

The highest yield of rape variety Dobrobut and 2,45 t/ha, and in variety Ataman – 2,50 t/ha was obtained in our researches. The yield increase of it is the highest 0,94–0,99 t/ha comparing with oil radish of Zhuravka variety.

The highest yield in our researches was obtained by a rape variety Dobrobut and it was 2,45 t/ha, and in variety Ataman – 2,50 t/ha. The increase yield compared with oil radish varieties Zhuravka is the highest and is 0,94–0,99 t/ha.

The highest oil content was characterized by flax – 51,5 %. In other crop oil contents was significantly lower. The lowest oil contents was in white mustard – 40,6 %. In oil radish and spring rape Oil content increased respectively by 43,2 and 43,8 %, it is higher compared with white mustard by 2,6 and 3,2 %. Oil content of false flax increased compared with white mustard by 3,7 % and amounted 44,3 %. Among oil cabbage family the highest oil content was Brown mustard – 45,8 %. Oil content in false flax increased compared with white mustard alba by 3,7 % and amounted 44,3 %. Among oil ones of cabbage family the highest oil contents was in Brown mustard – 45,8 %.

The expediency of crop cultivation is grounded by indices of economic efficiency.

Cultivation of oilseeds was highly profitable. It is explained by a relatively high yield in researches and high prices for oilseeds. Net profit from 1 hectare was lower during growing of mustard varieties and radish oil, where it was within 7740 – 10 860 UAN. It should be noted that during false flax and flax growing, the profit was twice more. It was respectively 21,750 UAN and 21,450. The level of profitability is very high in false flax (181 %) and flax (179 %). In other crops it ranges between 60–85 %. In order to increase the yield of flax and false flax it necessary is to improve the technology of cultivation of oilseeds. – P. 46–49.

UDC 633.11«324»:631.5:631.4

Gyrka A. D., Bokun O. I., Viniukov O. O., Ischenko V. A., Gyrka T. V. Effect of soil tillage and sowing systems of winter wheat on agrophysical properties and soil nutritious regime.

Keywords: winter wheat, soil tillage, seeding, productive moisture, nutrient elements.

The results of production testing and introduction the soil tillage and sowing systems of winter wheat are presented. The features of agrophysical properties, of the moisture dynamics and nutrient regime of soil under the influence of factors are determined. – P. 49–53.

UDK 633.11“324”:632.4

Pedash T. M., Horshchar O. A. Spreading and development of root rot of winter wheat in the conditions of northern Steppe of Ukraine.

Keywords: root rot, winter wheat, spreading, development of disease, predecessors, varieties, pathogens.

In the conditions of Steppe Ukraine winter wheat is affected by many diseases, among which the root rot occupy a leading place in distribution and harmfulness. They affect the roots and radical part of the stem, underground internode, tillering node and reinforce negative influence on yield and grain quality other factors: drought, insect affection. It is known that the yield loss from the disease could reach 30 %.

In 60–70 years of the last century it was found that in the area of Steppe of Ukraine affection of winter wheat with root rot appears annually and is largely dependent on the agrotechnics and the weather.

In connection with a climate change, variety composition, agrotechnics, saturation crop rotation with cereal crops there was a necessity for research and studying of spreading and development of this disease in the conditions of northern Steppe of Ukraine.

The researches by definition of the affection of winter wheat sowings by root rots were conducted during 2008–2010 and 2014–2015. Samples for analysis were taken from industrial farms of different districts of the Dnipropetrovsk region.

The results of studies indicate that the disease in the territory of region is widespread. In 2008, depending on the district of region, variety and predecessor spreading of root rot in industrial crops was 13,2–55,7 %, development – 4,5–21,7 %; in 2009 the corresponding figures were 29,8–72,0 %, 9,8–30,2 %; in 2010 – 19,8–74,0 %, 5,9–32,0 %; in 2014 – 93,4–100,0 %, 49,5–56,0 %; in 2015 – 89,1–100,0 %, 32,1–40,6 %. This is connected, primarily, with high saturation of current rotation with cereal ear crops that contributes to accumulation of infection in the soil, and with features of weather conditions in 2014 and 2015.

Significant fluctuations in plant root rot affection within the year confirms the importance predecessor and variety.

It is determined, that after stubble predecessor, the affection disease indexes were higher than after the predecessor bare fallow, and for sowing wheat after winter rape – almost on level of bare fallow.

Among the varieties of winter wheat, sown after bare fallow, in 2008 the variety Selyanka, in 2009 – Kuyalnyk, in 2010 – Spivanka had the lowest indexes of root rot development, respectively 4,5, 12,9 and 5,9 %.

It is established that the main root rot causative agent of winter wheat during the years of researches were fungi of the genus *Fusarium* and *Helminthosporium sativum*.

Our data allow to conclude that the winter wheat root rot in the steppe zone make the progress. The main reasons are: high saturation of crop rotation with crops, leading to the deterioration of the phytosanitary situation; lack of organic fertilizers that increase disease-wheat and limit the development of root rot due to displacement of pathogens, microorganism santohonistamy. Of great importance in the development of root rot are also weather conditions predecessors and features of winter wheat. – P. 53–58.

UDK 633.11.111:631.53.04

Usova N. M. Effect of sowing time on the yield and quality of winter wheat in the conditions of southern steppe of Ukraine.

Keywords: winter wheat, varieties, sowing, yield, protein content and gluten, grain quality.

The results of years of research the reaction of different varieties of winter wheat for sowing in conditions of southern steppe of Ukraine. Established the trend of grain yield at a deviation from optimal sowing in the direction of early (5 September), and towards the later (October 5). Top yields and grain quality of winter wheat varieties Antonivka and Sluzhnitsia Odeska were in the sowing on 25 September.

Purpose was to develop improved agricultural practices of growing products of modern varieties of winter wheat on the fallow at different seeding time. Anticipated to determine the influence of sowing time on plant growth, yield and quality of grain.

Scientific novelty of the research is that in a dry southern steppe of Ukraine for the first time defined the reaction of modern wheat, soft kinds like Antonivka and Sluzhnitsia Odeska – in different sowing time and when grown on fallow, found out that the parameters of grain quality depend from the agricultural practices.

Field experiments were conducted in 2011–2015. Laboratory of agromachinery farming crops Institute of oilseeds.

In the study of sowing winter wheat were taken into account various factors – namely earth humidity, temperature regime, calendar dates for this technology method, complex interactions of which create different conditions for plant growth and development during the autumn growing season.

The results of the research the optimal amount of effective temperatures for periods of "sowing – stairs" and from germination to the termination of the autumn vegetation recruited plants for planting 25 September – respectively 135,6 and 352,1 °C.

In average for five years (2011–2015) at the time of termination of the autumn vegetation close to optimal parameters were plants of winter wheat sowing on 25 September. However, a significant escalation of plants, which led to quantitative growth values most morphological indicators occurred by sowing between 5 and 15 of September, while on 5 October sowing grain values were much lower than optimal.

Sowing and related abiotic and biotic environmental factors significantly affects on the level of productivity of plants. Winter wheat yield significantly varied by year, resulting from significant fluctuations in weather conditions during the years of experiment.

In average for most years of research productivity of winter wheat sowing formed at September 25, its performance depending on the variety averaged 5,36–5,71 t/ha. Compared with the best options for sowing as in the earlier period (September 15), and a later (October 5) resulted in lower yields of grain: 15 September – 0,13–0,88 t/ha or 2,4–5,4 %, 5 October – 0,24–0,35 t/ha or in 4,5–6,1 %. For sowing of winter grain yield 5 September decreased even more – by 15,5 % (Antonivka) and 16,8 % (Sluzhnitsia Odeska) and amounted to 4,53 and 4,75 t/ha.

Found that sowing time affect on the level of grain productivity and quality of winter wheat. The main indicators of the quality of winter wheat in the first place, it is the content of the protein gluten and its properties.

Experimental data suggest that quality of winter wheat in some way dependent on sowing time. Thus, the average years of research on all sorts of sowing winter wheat grain were low in protein: September 5 – 10,4–10,6 %, 15 September – 11,2–12,0 %, 25 September – 11,1–11,6 %, 5 October – 10,6–10,7 % . Almost in all areas at sowing 15 and 25 September shaped by better-protein grain. A similar trend took place and content in grain for gluten. So, its lowest number in grain varieties Antonivka was recorded by early sowing (September 5) – 23,2 %, and the highest – 24,9 % – for sowing 25 September. And the kinds of wheat Sluzhnitsia Odeska gluten in grain planting was on 15 September – 23,5 %, and most – 24,9 % – 25 September.

The results of the studies found that when growing winter wheat varieties such as Antonivka and Sluzhnitsia Odeska, the best and most appropriate calendar sowing in conditions of southern steppe of Ukraine, in which properly disclosed their genetic potential is 25 September. Crop as in earlier periods (5 and 15 September) and in later (October 5) reduces the yield of winter crops. – P. 58–62.

UDC 631.512.631.582.631.8

Artemenko S. F., Kovtun O. V. Productivity of soybean depending on different doses of fertilizer and basic tillage in short-rotation crop rotations.

Keywords: soybean, doses of fertilizers, predecessor, crop capacity, crop rotation, short rotation.

Soybean is the main grain legumes, which determines the level of production of vegetable protein.

It takes the main place in the structure of sown areas of grain legumes. Soybean protein is saturated with important amino acids and after heat treatment indicated high digestibility and assimilation. Problem of protein and energy resources becomes essential in modern conditions for the world's population and also availability of protein balanced feed in sufficient quantities for agriculture in the livestock branch. To intensify the livestock branch important value has the presence of a sufficient amount of plant protein and high-energy feed in ration of animals. Increasing of productivity of field crops such as soybeans can solve the problem of feed grains and protein for the industry.

In this regard, results of comprehensive research deserve the attention that have been conducted in 2008–2015 in the Erativska Experimental Station SU Institute of Agriculture of the Steppe zone of NAAS of Ukraine, whose purpose was to study agronomic aspects of expediency of different methods of basic tillage and doing up varying doses of mineral fertilizers by farming of soybeans in short-rotation crop rotations in climatic conditions of Northern Steppe.

The experiment was laid on the background of two methods of basic tillage: mould board ploughing and chiseling. We have studied the saturation of crop rotations by soybean: in two-field crop rotation it was 50 %, in three-field crop rotation it was 33 %, in four-field crop rotation it was 25 % and 50 %.

In modern conditions because of high-value fertilizers it is necessary to use them rationally depending on the availability nutritious elements in the soil and predecessors. The systems of fertilization in crop rotation were studied by the scheme: control – no fertilizer; use the increase norm of fertilizer according to the results of soil diagnostic and use of fertilizers in recommended doses; the recommended doses of fertilizer for soybeans – $N_{40}R_{60}$. Fertilizers made under the basic tillage in the autumn.

The results of analysis of structural composition of soil showed that this agrophysical index had depended significantly both on the method of basic tillage and on predecessor.

Conditions of growth and development influenced in some way the formation of the harvest and individual structure of plants of legumes. The analysis of the structure of the soybean harvest has shown that its productivity was mainly determined by number of beans and corn on one plant and the mass of 1000 seeds depending on the doses of fertilizers and basic methods of tillage doses of fertilizer influenced on the main indicators of the harvest structure in a great degree than the basic soil tillage methods.

Thus, in conditions of insufficient moisturing of the Northern Steppe better conditions for the formation of the soybeans harvest were in sowings of legumes both on the background of ploughing and chiseling after corn for grain in two-, three- and four- field crop rotations with doing up of fertilizer according with normative method by data of diagnostic of soil. – P. 62–66.

UDC 631.527.5:635.67

Klimova O. E. Divergent line of the sugar corn, created when use sample exotic embryonic plasma.

Key words: sugar corn, selection, lines, signs, divergent, sources, productivity, its constituents.

The lit results of the studies inbred line of the sugar corn, created when enabling in their family sample of the exotic embryonic plasma of the different botanical composition and geographical origin. Use give type source material has provided creation new line with specific manifestation row economic-important sign.

In contrasting condition natural moisture provision 2014–2015 year are installed presence difference in length of the period "young-growth-blossom 50 % cob" beside valued genotype, which varied from 48 before 75 days under average importance 58,9 and 59,8 days. The Identified early-ripe to lines with long this period 48–52 days, fair-early (55–57 days), fair-ripe (58–60 days) and fair-late (62–75 days). The Majority line are referred to high-tale, their height reached 155–157 refer to that on 9–23 refer to was above, than beside lines-standard KC209A. Maximum height of the plants (167–252 refer to) is noted beside line KC706-1, KC706-2, KC957-1, KC957-2, KC954, KC955-1, KC956-1 created at participation of the local sort with Iraq and synthetic Mexico and Australia. The Lines KC65-1, KC910-1, KC955-1, KC956-1, KC957-1, ILS23-1, ILS28-1, ILS28-2, ILS29-2 with height of the fastening cob 50–70 are refer to classified in group with average factor, but KC706-1, KC706-2, KC954, KC957-2 in group with high (73–121 refer to) importance sign.

The Top productivity (46,5–62,1 g grain with plants) formed the lines KC63-1, KC66, KC68, KC706-1, KC706-2, KC954, KC955-1, KC956-1, RSE19-1, RSE19-2 beside which she on 100,8–133,6 % exceed the standard. The Maximum color grain with cob (41,8–49,7 g) typical line KC68, KC956-1, RSE19-1, RSE19-2. The Stable aptitude to two-cob (1,20–1,42 cob on plant) were characterized by KC63-1, KC66, KC68, KC706-2, KC956-1, KC957-2, ILS28-1, RSE19-1, but KC706-1, KC954, KC955-1, ILS23-1 formed stable high (1,43–1,90) amount cob. Raised grain productivity (290–395grain on cob) is noted beside majority valued line, but KC63-1, KC956-1, RSE19-1, RSE19-2 provided very high (419–600 rows) quantity grain cob. The Lines KC954, KC957-2 are evaluated as genotype average mass 1000 grain, forming 206–214 are chosen long-cob of the form KC64-1, KC706-1, KC706-2, ILS28-2 c long cob 14,6–19,0 refer to, as well as with raised (15,2–17,3 rows grain) KC68, KC69, KC706-1, KC956-1, KC957-2, RSE19-1 and high (18,4–20,0) rows KC63-1, KC19-2. Very long grain (9,2–12,3 mm) differed the lines KC957-2, ILS28-2. The Row line are a source to collections (from 2 before 5) sign.

The Analysis statistician variation rows has attested average different qualitative line on length of the period "young growth-blossom 50 % cob ($S^2 = 37,1-41,2$; $V = 10,3-10,7$ %), on height of the plants ($S^2 = 899,7-507,3$; $V =$

19,1–14,6 %), height of the fastening the cob ($S_2 = 488,9–357,4$) under significant variability ($V = 34,6–39,5$ %) of the sign. According to variance of the dispersions is noted high genotypic divergence valued samples line on productivity of the plants ($S_2 = 189,6–141,8$), mass grain on cob ($S_2 = 158,2–138,0$), mass 1000 grain ($S_2 = 777,4–750,4$) very high ($S_2 = 8702,5–1052,7$) on amount grain with cob, but on amount cob ($S_2 = 0,04$), their length ($S_2 = 4,3–6,1$), amount of the rows grain ($S_2 = 4,5–6,1$) and length grain ($S_2 = 1,3–1,7$) low. Different was a level variability sign: significant ($V = 35,8–31,3$ %) on productivity of the plants, mass grain with cob ($V = 42,7–25,3$ %), amount grain with cob ($V = 33,1–32,6$ %) and average cob on amount on plant ($V = 15,2–17,4$ %), mass 1000 grain ($V = 17,3–21,1$ %), amount of the rows grain (15,1–17,6 %) and length corn ($V = 17,9–21,7$ %).

Use sort and synthetic population of the exotic embryonic plasma for making the linear material of the sugar corn were efficient, but organized selection was revealed positive. The estimation divergence genetic base created line has displayed the high level their difference on morpho-biological sign. Chosen on the basis of sign sample will assist increasing effective heterosis to breeding of the sugar corn and their follows broadly to involve in selection program on creation high and able to meet competition hybrids. – P. 66–73.

UDC 633.16:631.8

Zayets' S. A. Productivity of winter barley depending on the types of nitric fertilizers and additional fertilizing.

Keywords: winter-annual barley, ammoniac saltpetre, carbamide, CAM, *Trichoderma lignorum*, productivity, economic efficiency.

To determine the efficiency of different kinds of nitric fertilizers and additional fertilizing on sowing of winter barley after a stubble predecessor, which are sent to the receipt of high harvest of grain.

Researches were conducted in Institute of Irrigated Agriculture NAAS after methodical recommendations relatively to carrying out the field tests in unwatering terms. Soil of the experimental field is a dark-chestnut, heavily loamy, salt-marsh with content of humus – 2,3 %, by a closeness – 1,3 g/cm², by fading humidity – 9,8 %, by the least moisture-capacity – 22,4 %.

It is set that preseed bringing of ammoniac saltpetre, carbamide and carbamide-ammoniac mixture (CAM) in doses N_{30} and biologic of *Trichoderma lignorum* (5 l/ha) in mixture with 20 kg/ha of carbamide provided the near productivity laid down 4,29 accordingly, 4,27, 4,28 and 4,29 t/ha. Early spring additional fertilizing of sowing of winter barley ammoniac saltpetre in the dose N_{30} promoted the productivity on all backgrounds of the autumn bringing to 5,18–5,40 t/ha. Thus the increases of grain, that receipt from the additional fertilizing, made from 0,89 to 1,11 t/ha and were mathematically well-proven (LSD_{05} for private distinctions on a factor B = 0,28 t/ha). The maximal increase of 1,11 t/ha is got at variant, where the additional fertilizing was conducted ammoniac saltpetre on a background the preseed bringing of forecastleman mixture of biofungicide of *Trichoderma lignorum* (5 l/ha) with a carbamide (20 kg/ha).

Difference in harvests (0,04–0,22 t/ha) at the additional fertilizing on different backgrounds kept indoors ammoniac saltpetre outside the error of experience (LSD_{05} for partial differences on a factor A = 0,27 t/ha).

During realization of the additional fertilizing of sowing of winter barley the productivity of grain rose carbamide-ammoniac mixture (CAM – 30 %) on 0,59–0,82 t/ha, that was reliable. The maximal increase of 0,82 t/ha is got on a variant, where the additional fertilizing of CAM (N_{30}) was conducted on a background the preseed bringing of carbamide (N_{30}).

The use of ammoniac saltpetre for the additional fertilizing of sowing of winter barley is small advantage above application in the additional fertilizing of carbamide-ammoniac mixture (CAM). Difference in the productivity between these types of fertilizers, which was brought in the additional fertilizing early in spring, made 0,23–0,47 t/ha.

On the average on a factor B (additional fertilizing) on variants without realization of the additional fertilizing the productivity folded 4,28 t/ha, and with the additional fertilizing by ammoniac saltpetre and carbamide-ammoniac mixture (CAM) – according to 5,28 and 4,96 t/ha, or on 1,00 and 0,68 t/ha is higher, that is mathematically reliable (LSD_{05} for middle effects on a factor B = 0,14 t/ha). At the use ammoniac saltpetre took advantage in the additional fertilizing of ammoniac saltpetre or CAM, because provided the higher productivity.

The greatest productivity of 5,40 t/ha a winter barley after a stubble predecessor (stubble of wheat on steam) provides at bringing to sowing of mixture of biological preparation of *Trichoderma lignorum* (5 l/ha) with a carbamide 20 kg/ha and additional fertilizing early in spring by ammoniac saltpetre in the dose of N_{30} . A most economic effect is thus got – conditionally net income made 7786 UAH/ha at the level of profitability 150 %. – P. 73–79.

UDC 632.5:574

Gavrilyuk U. V. Presence of weeds of sort of *Cuscuta* weeds in phytocenoses culture Luhansk region.

Key words: parasitic weeds, weeds, phytocenoses culture.

It is especially difficult to be to contest with weeds that on the biological indexes have considerable advantages above cultural plants, live on the fields as a "aboriginal component" and even chemically-agrotechnical innovation, that is applied by humanity in a fight against them does not destroy these sensible kinds, but produces in them immunity and firmness to the measures and facilities them anthropogenic control.

Unlike unparasite green weeds weeds are closer related to the plants-owners. In phytocenoses culture of north Steppe of Ukraine it was educed such weeds-vermin of sort of *Cuscuta*, as *C. campestris*, *C. trifolii*, that parasitized on culture plants both in the conditions of irrigation and without him

The study of various cultural plant communities with the aim of establishing the level of clogging their weeds by parasites of the genus *Cuscuta*.

The problem of appearance of these kinds in sowing of agricultural cultures also consists in null data in economies about monitoring of vegetable groupments that territorial fit closely to fitocenoses agro and are the permanent suppliers of seed and sprouts of weeds, illnesses and wreckers.

Consider the qualificatory result of rout researches, that weeds of sort of *Cuscuta* were educed only on cultural plants, and at the inspection of territory fhytocenoses culture, these kinds parasitized on many autophyte weeds that is characterized by different biological features and belong to different botanical families.

In the conditions of irrigation vegetable cultures were more забур'янені *Cuscuta* of campestris, than without irrigation. It is explained obviously by that integumentary fabrics of cultural plants on irrigation are better provided with water and more elastic, that assists easy mechanical penetration of vermin in fabrics of green cultural plants. Besides at the sufficient providing of soil moisture of seed of *Cuscuta* of campestris germinates better.

Fhytocenoses agro of alfalfa sowing were shivy mainly *C. campestris*, but cells of dodder here it was in 5–10 times less than, than on vegetable plants.

In all fhytocenoses culture most staggered autophyte weeds were exactly *Cuscuta* of campestris. In addition the far of stair of her was educed in silvo culture on such weeds as *Capsella bursa pastoris*, *Chenopodium album*, and *Amaranthus retroflexus*. It is educed that weeds – vermin due to the biological properties are widespread not only on areas with intensive anthropogenic influence but also in less dependency upon a man territories (forest bells, meadows), that is why exactly these their populations carry the threat of maintenance and hit of parasite types of plants on the fields.

Consider the qualificatory result of rout researches, that weeds of sort of *Cuscuta* were educed not only on cultural plants, and at the inspection of fhytocenoses urbo, fhytocenoses silvo, meadows and pastures these kinds parasitized on many autophyte weeds that is characterized by different biological features and belong to different botanical families.

Autophyte weeds that happen in adherent to sowing of agro cultures of fhytocenoses culture carry a threat not only as transmitters of illnesses and wreckers but also there are banks distributions in fhytocenoses agro of weeds-vermin. Weeds-vermin due to the biological properties are widespread not only on areas with intensive anthropogenic influence but also on less dependency upon a man territories (forest bells, meadows), that is why exactly these their populations carry the threat of maintenance and hit of parasite types of plants on the fields. – P. 79–81.

UDC 633.15:631.53.026

Курпа М. Я. Кulyk V. A. Energy saving techniques in drying technology corn seeds.

Key words: thermal drying, drying chamber, energy saving techniques, seed quality, sowing and productive properties.

Drying of seed corn requires much more energy consumption compared to other crops. Therefore, the search for new energy-saving techniques post-harvest handling of corn is important.

The aim of this work is to analyze the known energy-saving techniques and to develop on their basis of essentially new ones, which would have reduced the consumption of traditional fuels for drying corn and have provided high quality seeds.

Features of energy-saving techniques were studied on the basis of the chamber dryers of the type DCL-6, equipped with heat generators operating on solid fuel (rods of corn). The research was carried out in 2015–2016 in terms of the experimental farm of the SE "Dnipro". In the drying process of corn selected seed samples for the determination of sowing qualities on the methods of national standards and further recommended by the Institute of grain crops.

Analysis of the known energy-saving techniques included: two-stage drying, preheating cobs before the main drying, return the waste fluid into the drying zone (recuperation), use maximum permissible temperature, the parallel purge chambers, a differentiated heat treatment, reversal (change of direction of the coolant). All these techniques have a different impact on energy consumption and the quality of drying. The greatest reduction in energy consumption is achieved in the two-stage drying of seed corn. It is carried out by drying of the cobs, and then when thresh grain moisture 20–22 %, with subsequent drying in the dryer, shaft-type. The total duration of drying was reduced almost in 2 times, and fuel consumption by 40 %. However, the decreased amount of energy of germination and germination at the stage of threshing and drying mine in the dryer after a considerable mechanical injury of seeds.

Fundamentally different direction is energy-saving drying with the use of generators that operate on fuel of plant origin. Recently in trade networks of Ukraine, there are many generators that run on vegetable fuel capacity 0,5–5,0 mW, but not all are suitable for drying seed corn in the cob. On the principle of heat generation of the heat generators can be divided into pyrolysis (with a closed system biomass combustion) and direct action (open system). The latter have a greater efficiency – 90–95 %.

Based on the analysis of the technical capabilities of generators, we justified the basic requirements for their design for drying seed corn: fuel; heat capacity; stable temperature control; sanitary and ecological norms, the purity of products; fire safety; efficiency; logistics characteristics (grade of metal, heat resistance, lining); the control mode of drying; the cost in relation to its thermal capacity; the loading mechanism; removing ash and slag.

We conducted a survey of features of work drying chamber of the heat generator TPG-1/25. The basic model of the heat source has an original design and works in the mode of direct combustion of the fuel – rods of corn. Thermal power prototypes of the generators is 2,0–2,5 mW depending on the volume of the coolant.

Tests carried out on the basis of seed-growing farms showed high technical and technological, operational and economic indicators of work of a new heat source. The seeds of hybrids of corns, harvested with a moisture content of 20–35 % and dried in a dryer equipped with a heat source, a little high of the standard germination and growth. Field

germination and yield of such seeds was at the control level (seeds after optimal modes of drying in the laboratory drier). – P. 82–87.

UDC 631.58:631.582:631.51

Shevchenko M. S., Desyatnik L. M., Shapka V. P., Kokhan A. V. Impact on productivity and soil fertility in Steppe the elements of agriculture biologization.

Key words: *systems of agriculture, biologizing, crop rotations, till of soil, productivity, productivity of crop rotations, fertility of soil.*

Agro-industrial complex is a very important sector of the economy. One of its main objectives is production of high quality crop production simultaneously with maintaining of soil fertility. But the intensive development of agriculture led to the depletion and degradation of natural landscapes and reducing soil fertility. It stipulates necessitates a new system of agriculture, which will fully ensure food processing raw materials, and for the population - quality food and thus reduce environmental risks, which requires urgent implementation of scientifically based measures.

The problem of soil fertility decline humanity faced since ancient times. Over a scientific solution to this problem many scientists worked, among which highlight was Mokysly Okada, R. Steiner, E. Pfeiffer, who developed the basics of organic farming.

Today one of the promising direction of improvement of agriculture is biologization. Elements of which focused mainly on the use of biological, rather than chemical manufacturing and technical facilities in order to increase economic efficiency and environmental management.

An effective biological factor in agriculture is scientifically substantiated crop rotation, positive impact which is reinforced by expanding the share of annual crops and perennial legumes grasses, legumes, implementation green manure and intermediate crops as organic fertilizer.

In Erastivka Research Station of Institute of cereals (north Steppe) in the third rotation of In a 8-filds crop rotations was introduced the second legumes – soybeans. To the organic system of fertilization (12,5 t/ha manure) made changes: added the remains after harvesting of the crop plants and green manures into the soil (oil radish crops after harvesting winter wheat and spring barley).

These elements of biologization had positive influence on the productivity of crop rotation. In grain-crop rotation the grain output per hectare increased by 7,8 %, the yield of grain – by 7,9 %, the production of feed units – at 9,10 %, the collection of digestible protein – by 21–23 %. Against the background of an improved system of organic fertilizers increase amounted to 11, 16, 13 and 26 % respectively.

In experiments of Kirovohrad Research Station proved that concentration increase of soybean in crop rotation over 20%, leads to a decrease in of productivity of soybean and crop rotation generally. Thus, the yield of grain units with increasing saturation of soybeans from 20 to 60 % changes from 4,52 to 4,08 t/ha; output feed units – from 5,08 to 4,90; yield of digestible protein – from 0,59 to 0,50 t/ha.

One of the important techniques of biologization of agriculture is the introduction of green manure. In Erastivka Research Station yield of winter wheat after green manure was only 4–5 % lower than its yield after black fallow.

For replenishment of soil organic matter it is necessary to use supplementation by-products produced of crops combined with soil saving mulch cultivation. In experiments of Institute of cereals the level of productivity of crop rotation was slightly different when applying mulch tillage system, but profitability of mulch system efficiency exceeds plowing. Proved that the most effective is the organic-mineral fertilizer system (sideline products + N₆₀P₃₀K₃₀), which leads to a significant improvement of soil nutrient regime and increase productivity crops.

Among the processes used in agriculture with biologization is minimizing tillage, particularly, No-till technology. But in the Steppe when it used formed lower productivity of grown cultures, as evidenced by the results of experiments of Askaniya Research Station (yield of cultivated crops decreased by 16–38 %).

In general, items of agriculture biologization contributes to improving the conditions of supply of crops, soil fertility, product quality, increase productivity of arable land and a positive impact on the environment and health of people and provides food and ecological safety of the state. The experience of developed countries shows that it is cost-effective development path, because biologization in Ukraine has become an important direction of development of agroindustrial complex. – P. 88–96.

UDC 633.15:632.954

Fedorenko E. N., Aldoshin A. V., Kravets S. S., Bernackiy M. M. Influence of soil herbicides, on the field germination of seed of paternal forms, of corn hybrid DN Akvozor.

Keywords: *corn, paternal form, field germination, soil herbicide, dosage of bringing.*

Results of researches, reactions of parental forms of corn's hybrid are given in article: DN Akvozor, on herbicides of soil action: Harnes, Proponit, Dual gold and Primekstra, at the minimum and maximum dose of their introduction.

Specific reaction of seeds of hybrid's parental forms of corn, with a different genetic basis, on soil herbicides and doses of their introduction is established.

It should be noted that the phytotoxic effect of soil herbicides by years of research definitely varied as hloratsetamidy (atsetohlor, propizohlor, s-metolahlor) inactive in the soil, because their action takes place only in the presence of moisture in the soil. After-made lists of drugs distributed evenly in the upper soil layer (3–5 cm) of just under arti-

ficial irrigation or under the rain. Typically, 10–15 mm of rain is enough to activate the drug. Therefore, an important factor in the application of soil herbicides are the weather conditions at the time of sowing and germination of seeds.

Weather conditions in 2014 during the sowing of corn (27 April), seed germination and the early stages of plant development characterized by the rapid increase of air temperature and precipitation deficit. The average daily temperature in May exceeded by 2.4 °C long-term norm, and rainfall was 124.7 mm or 271,1 % of the long-term norm, resulting in increasing soil herbicides.

Weather conditions in 2015 for the planting of corn (April 29) differed in terms. In the third decade of April and early May there was cool weather deficient rainfall. Thus, the average temperature in the third decade of April was 11,4 °C, which was at 0,2 °C below the average long-term norm. Precipitation fell for the week of 8,4 mm to 4,6 mm less than the average long-term norm. This weather was the beginning of the second decade of May, which resulted in reducing herbicides.

Studies have established:

- weather conditions definitely affect phytotoxic effect of soil herbicides: proponit, harness, prymekstra, dual Gold;

- the maximum dose of herbicide proponit, harness, prymekstra, dual Gold that manufacturer are recommending for use in crops of maize hybrids F1, more adverse effects on the germination of seeds of hybrid's parental components of corn DN Akvozor than the minimum;

- set different response parental components of hybrid NAM Akvozor to herbicides proponit, harness, prymekstra, dual Gold, and their doses.

According to experiment, we recommend that in areas of growing hybrid seeds DL Akvozor (♀ Cross 371 M sterile's ♂ DK680MVZS) to apply soil herbicides proponit 2,5 l/ha or harness, 2,0 l/ha;

When we choose among specific herbicide should take into account. – P. 96–99.

UDC 633.174:631

Yalanskiy O. V., Sereda V. I. Sorghum – economic and energy resources for biofuel production.

Keywords: *sugar sorghum, breeding, hybrid, heterosis, sterile counterparts, fertile line bioenergy.*

Now our society is concerned about energy security. The minerals that are mined from the earth is limited. In terms of today's need for energy tends to be rapid growth. So the question arises as to ensure a comprehensive population with energy sources that are continually updated, because the land of plenty. Natural solar energy battery is a plant. With the increasing energy crisis the role of plants as a converter of solar energy in organic matter (biomass) is gaining weight. Recently the question fitoenergetik implementation of the grid, both in Ukraine and in the world. Thus, the waste obtained in the processing and production of energy from vegetable products assimilated almost ecosystem without causing her harm. Fitoenergy can provide biogas, biodiesel, bioethanol, butanol and solid biofuels. Culture, able to ensure that all sectors of phytoenergy raw materials in Ukraine is sugar sorghum. Due to their biological characteristics of sugar sorghum is highly resistant to biotic and abiotic environmental factors, so it should be resource materials in the areas of risky agriculture. Stable quality obtain high yields of sugar sorghum possible due to heterosis breeding in this area.

This article discusses the advantages of sweet sorghum as a bio-energy culture in creating a stable raw material base. The technology of cultivation of sweet sorghum on the basis of which problems arise for selection. The direction of breeding development for the raw material needs of society with minimal energy consumption. Estimated promising hybrid combinations of sweet sorghum A 326, Karlykove 45, Nizkorosle 81c, Silosne 42 (Kript), DN 71, Silosne 42 (Phoenix), Kafrske kormove 186, Silosne 42 (Ananas), which are characterized by improved morphology, yield and biochemical properties compared to standard Silosne 42. Best hybrid combination of sweet sorghum DN 71, Karlykove 45 (Phoenix), Kafrske kormove 186, Silosne 42 (Ananas) in the State testing. – P. 99–103.

UDC 633.15:631. 52

Bielikov E. I., Kuprichenkova T. G. The prospective hybrids of popcorn.

Key words: *hybrid, popcorn, productivity, popping expansion volumes, flake.*

Popcorn (*Zea mays* L. evert Sturt) is one of the most ancient subspecies corn. According to archaeologists, the pre-Columbian era in American Indians used it extensively in the food purposes, but only since the late nineteenth century it became an industrial culture.

There are two shapes of popcorn kernel, the rice type and the pearl type. Rice types tend to be long and slender with a sharp point at the top, pearl types are more round with a smooth top. Compared with other subspecies of maize weevil finer (absolute weight 35–240 g), very hard, glassy. Corn contains 16–18 % protein and 60 % starch.

In the State Register of plant varieties suitable for dissemination in Ukraine in 2016 is only 6 hybrids of popcorn, of which 3 (Gostinets, Shuns, Furor) – State institutions Institute of breeding crops. The creation of new productive hybrids and high popcorn, genetically adapted to adverse environmental conditions is important and relevant.

According Sinelnikovska agro meteorological stations, 2013–2015 years were very hot. Maximum daily temperatures in July and August marks achieved: in 2013 – 35,7 °C, in 2014 – 39,2 °C, and in 2015 – 36,5 °C. Such weather conditions on the one hand, facilitated the detection and selection of resistant forms of corn, and the other – reduced absolute levels of plant productivity.

The main goal of our research was to identify promising hybrids of popcorn, which successfully combine high grain yield with high volume increase when receiving popcorn.

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The starting materials for research were 26 popcorn hybrids competitive test created in the laboratory breeding maize hybrids toward food use. For standard was taken by middle-hybrid Gostinets.

Experiments were conducted on Sinelnikovska breeding and research station of State institutions Institute of breeding crops for 2013–2015 years. Land area was 8,4 m², and stand density 40 thousand plants/ha. Agricultural practices applied in the research answered generally accepted guidelines set out in the method of field experiment. The crop harvested by hand threshing of ears spent electric threshing. After determining the mass of grain harvesting areas and humidity, grain dried and kept in a cool room. Defining technological parameters was performed 3 months after harvesting. For popping corn used machine «Alaska PM 1280».

Analysis of grain yield of hybrids competitive test popcorn showed that due to adverse weather conditions it was small, and averaged 3,16 t/ha. Significantly higher than standard grain yield was only one hybrid combination (IKR31 x IKR35) x IKR17-2 – 3,87 t/ha and 85 % of hybrids it was at standard Gostinets – 3,40 t/ha.

Rate of popping expansion volumes (PEV) in hybrids competitive test an average of 3 years ranged from 28,3 to 36,9. The lowest it has been in Gostinets, and the highest – in hybrid (IKR72-2 x IKR37-3) x IKR16-1. Satisfactory rating (PEV ≤ 30) had four hybrid combinations, or 15 %; good rating (PEV = 31–34) – 21 hybrids, or 77 %, and excellent rating (PEV ≥ 35) – 2 hybrids: (IKR72-2 x IKR37-3) x IKR16-1 and DN Typhoon. Hybrid DN Typhoon is promising hybrid and in 2014 it is at the state strain testing.

To identify promising new hybrids of popcorn that successfully combine high grain yield with high popping expansion volumes, we moured the ranks of the two indices. Lowest – 8 points, it was the hybrid DN Cyclone, which in 2015 was transferred to the state sort testing.

The popped product kernel is called a flake. There are 2 distinct flake types that are commercially important: butterfly and mushroom. Most hybrids (54 %) had a flake "butterfly", with ragged edges of grains, like wings. This type has highest popping expansion volumes, but flakes are fragile. "Mushroom" type was only hybrid DN Karamel. This type is correct spherical shape, which is especially valuable for making glazed sweet and caramelized popcorn. Hybrid DN Karamel is promising hybrid, and in 2017 will be transferred to the state sort testing. All other hybrids had an intermediate type of popping expansion volumes or a mixture of types. – P. 103–107.

UDC (477.63) 602:005.342

Benda R. V., Bondarenko A. S., Shevchenko A. M., Fedorenko I. E. Analysis of the scientific-technical and innovation potential of the Dnepropetrovsk region.

Key words: science and technology, innovation potential, scientific development, deployment, organizations, enterprises.

Issues of development of innovative processes in the field of agriculture is especially important in the period of overcoming the economic crisis in the country. Important in this context is the attraction of innovative developments enterprises. The need for this work is due to translation problems of agricultural production on the innovative model of development. The need for continuous of competitive development of grain farming. The main objective of the work is to research the scientific-technical and innovative potential of Dnipropetrovsk region.

In 2015, the largest proportion of the National Academy of Sciences of Ukraine, who carried out scientific and technical work necessary on the organization of the National Academy of Sciences – 56,7 %, and the National Academy of Agrarian Sciences – 26,3 %, respectively. In Dnipropetrovsk region in 2016 amount of organizations carrying out scientific and technical works – 58 of them NAAS organizations – 9.

The most important component of the Dnepropetrovsk region is a cadre component of the scientific-technical potential, which is all kinds of scientific-technical personnel capable of produce and implement new scientific-technical ideas, find new areas of application of scientific-technical results. In 2015, the number of workers who carry out scientific and scientific-technical work decreased by 22 % from 12267 people (2007) to 9604 – in 2015. In European countries, amount of scientific workers increased by 2,5–3 % annually.

The share of completed research and development work in the gross domestic product (GDP) in recent years and constantly decreases.

Negative impact on the development of the scientific activities of the Dnipropetrovsk region and the country as a whole provides a low level of funding in this field. There exists a direct relationship between economic development of the country and the level of scientific and scientific-technical work. The greater the percentage of GDP spent on the development of science, the greater the rate of economic development. In Ukraine, this percentage is very low. In recent years, this indicator does not exceed 0,7 % of GDP (in Sweden it is 3,73 %, in Japan – 3,39 %).

A result of performance of scientific and technical work in 2016 by the Institute of Grain crops of NAAS in the field of agricultural enterprises – 23 it covered the experimental introduction – 55 developments, including: technology in agriculture – 6; plant growing – 24; animal husbandry – 2; of varieties and hybrids of plants – 23.

The introduction in the agricultural enterprises of Dnipropetrovsk region innovative scientific research will contribute to the achievement of food security and the development of innovation on the basis of the agricultural sector of the economy, production of competitive and safe food products, and the growth of economic indicators in agro-industrial complex. Consequently, the increase in its commercial appeal. That in turn intensify the development and implementation of innovation and investment business projects with attraction of private capital.

Despite the high innovation potential of Dnipropetrovsk region, the innovative component of economic development not being used effectively. In the region has seen slow innovation activity of enterprises. In 2014, innovative activities was carried out 109 enterprises in the region, in 2015 – 63, their number decreased by 46 enterprises.

The same trend is observed at enterprises that introduce innovations. This is due to lack of funding. In 2014, the total volume of financing of innovative activity in the region amounted to 825,2 million UAH, of which 88 % of the own funds of enterprises. In 2015, the amount of financing innovation has been at the level of 756,9 million UAH, of which 750,3 million (99 %) is the own funds of enterprises. This was 11 % more than in the previous year.

As a result of analysis of the data, it found that the Dnipropetrovsk region has considerable innovative and scientific-technical potential and agro-industry, is one of the highest priority in the region's economy, has strong production capacity. But there are some problems that have arisen under the influence of the economic crisis, are: insufficient financing of scientific and technical sphere and innovation in enterprises, reduction of highly qualified scientific personnel, and reduction of innovation active enterprises. A positive aspect is that in the area carried out a systematic and comprehensive measure to improve the situation. There is a very strong relationship between science, government and business in the process of building a foundation for innovation to further rapid development of the region.

In the agricultural enterprises of Dnipropetrovsk region should be provided system formation of stable competitive advantages and enhance competitiveness on the basis of the complex transfer of innovation in the productive sphere. Accounting for the innovative factor in the long run should become one of the decisive conditions for the further development of economic entities in the agricultural sector. Only such an approach will combine the efficiency of an innovative economic activity of enterprises of the agrarian sector and will contribute to the achievement of strategic objectives. Therefore, the implementation of the transfer of modern innovative developments in agriculture, farming, animal husbandry and other branches of the enterprises of agrarian sphere of region, will increase their competitiveness and improve the efficiency of industrial and economic activity in general. – P. 107–111.

UDC 636.22.28

Kozyr V. S., Kovalenko V. P., Gekkiev A. D. Practical foundations of control and management of the selection processes in livestock.

Key words: breed, population, herd, selection, assessment, management.

Further progress in the breeding depends on the development of criteria for the evaluation of processes in breeding for economically valuable characteristics in adjacent generations. They provide an opportunity to identify changes in breeding populations in various forms of selection, the manifestation of the effect of heterosis or inbreeding depression. Recently conducted in-depth studies of the patterns of portatarga process that changes the genetic structure of populations depending on the breeding techniques and from the share improve of the breeds, combining ability of the original parent forms. This screewriting the process of change under the influence of natural and artificial selection does not stop, and consequently, identifying patterns in this direction cannot be stopped. The aim of the research was the theoretical justification of the practical principles of management selection processes by the method of synthesis of the achievements of domestic and foreign scientists. Modern zootechnical science, in general, use the informational approach to the development of methods of control and management of the selection processes. They can be grouped into the following blocks:

– immunogenetic control of origin of breeding animals. Was carried out the vast majority of breeding farms, thereby improving the accuracy of estimation of the origin of animals and contributed to a more efficient selection and breeding work. But immunogenetic parameters determine population status on breeding, neutral markers, therefore, there is need to assess increase processes directly for selective indication;

– management of the populations based on the level of the selection of characteristics is carried out in purebred breeding and crossbreeding by differential reproduction of valuable genotypes. This approach does not set changes in the genetic structure of the population, in the magnitude of the homo – and heterozygoty for adjacent generations.

– population-genetic characteristics to control for selection changes in populations. The main progenetica parameters of a population are the average values of the characteristics, indicators of their variability and inheritance, correlation, effects, general combining ability, environmental and genetic parameters. The main disadvantage of this technique is the inadequacy of certain ratios of inheritance of traits (h^2) actual sales of heredity, and the lack of criteria for predicting the heterosis effect without control of crossings of lines and breeds.

– creation of optimized computer systems for the analysis of productive and breeding qualities of animals and management of the selection process. This research involves the development of information systems to collect and check data breeding records, estimation of genetic parameters of a population and predict the effect of selection;

– control selection changes by setting the adaptive norm of different dimensional characteristics of the typological groups in the population depending on genotypical and paratypical factors of ontogenetic variability. When actually received by the adaptive norm of the decision on compliance of environmental conditions the genetic potential productivity of the gene pool that is being used.

Based on these theoretical approaches offers a flexible system control selection and technological processes: monitoring paramotoring that is based on the definition in the source and each following generation group structure of the animals in the combination-level selection characteristics; definition and consideration in the selection process regularities and specific features of realization of genetic information in ontogeny as one of the blocks in the system of genetic monitoring, account of the distribution of characteristics with changes in adjacent generations 3–5 indicators, namely: average values of the characteristic \bar{X} , the dispersion characteristic ΔG , fitness ΔW (the share of medium-sized individuals in the populations $\bar{X} \pm 0,67\sigma$), asymmetry and kurtosis of the distribution. It is advisable to continue studies of the dynamics of microevolution processes in the purebred breeding of domestic breeds of dairy cattle and their improvement with the use of improving breeds in crossbreeding. – P. 112–115.

UDC 636.4.082.43: 085.5

Agapova E. M., Susol R. L., Khalak V. I. The influence of young pigs' sex on their fattening and meat qualities depending on the availability of crude protein in the diet

Key words: young pigs, sex, fattening signs, protein feed, diet, sexual dimorphism.

The optimization of cultivation of repair young animals are relevant to the present day. About the advantages of intensive cultivation as repair and product youngsters evidence a number of studies of domestic and foreign scientists. So, in studying the effect of different levels (optimal, intensive and extensive) cultivation on the productivity and reproductive capacity of gilts is established that at optimum level of growing (average daily gains of 450–500 g) pigs reached a live weight of 125 kg for 274,7 days with the cost of feed per 1 kg increase of 5,5 feed. units At intensive level (average daily gains of 600–700 g) – 232,6 days, or 42.1 days earlier than peers in the control group with lower (0,85 feed. units) cost of feed. In extensive levels of cultivation (average daily gains of 150–200 g) mumps prevalne mass of 125 kg was reached 475,0 days, spending 1 kg of a gain of 6,93 feed units.

The purpose of the research is to investigate the effect of sex of young pigs of large white breed created factory of type "Prychornomorskiy" for its fattening and meat characteristics depending on the level of diets crude protein as parfionovo factor.

The experimental part of the research carried out in conditions of breeding reproducer of pigs of large white breed (factory type "Prychornomorskiy") SK "Shabolat" Odessa region (2014–2015) by the conventional pork production methods.

Analysis study the effect of sex of piglets for their fattening and meat quality depending on the level of crude protein showed that a statistically significant difference between indicators has not been established, but under the condition of full feeding of animals of the experimental group (the concentration of the crude protein content of 17,5–16,5 % per 1 kg dry matter of ration) feeding signs were the best in the boar: live weight 100 kg, they reached 2,9 days sooner than pigs with average daily gains 798,8 g (776,3 g in pigs), feed costs, they have 3,2 feed units.

Assuming the reduced level of crude protein in the young control group (concentration of the crude protein content of 14,5–13,5 % in 1 kg of dietary dry matter) advantage for feeding signs were on the side of the pigs, the fattening quality which was the best. Thus, live weight of 100 kg they reached 1,6 days earlier than when the hogs average daily gains 658,0 g (646,9 g boars), feed costs they were 3,6 food. units (3,7 food. units of the boar). In the 90-day age sexual dimorphism in terms of live weight was the same and amounted to 1,01 in both groups. As a result of further cultivation with the provision of different levels of protein power at the age of 180 days, the index of sexual dimorphism was 0,99 and 1,02 respectively in the control and experimental groups, respectively with moderate and high level of protein supply.

Increasing the level of crude protein in the diets of young pigs of factory type "Prychornomorskiy" contributes to the improvement of fattening and meat characteristics of young animals of both sexes compared to the control group a moderate level of feeding.

Therefore, from the perspective of sexual dimorphism can be noted that boars are more demanding on the level of protein nutrition. While reducing the level of crude protein observed violation of certain biological laws of growth of the pigs and a tendency to better feed characteristics pigs compared to boar. – P. 116–119.

UDC 636.2.085.13

Dimchya G. G., Maystrenko A. N. The level of protein in the diet of the calves and the efficiency of its use.

Keywords: feeding, ration, protein, heifers, increase, living mass, standard, conversion, efficiency.

In connection with that different countries and regions differ after climatic terms, composition of rations, quality of forages, degree of their preparation and feeding frequency, researches from determination of actual level of consumption by the cattle of nutritive and efficiency of their use are actual.

Researches were conducted in agricultural private enterprise (PRE) «Chumaky», Dnepropetrovsk district on the heifers of the Ukrainian red milk breed at growing from 7-th for a 15-th month inclusive. In the conditions of scientific production experience the control and experimental groups of animals were selected, for 20 heads in each. All period of experience in feeding of heifers was used of the same type in the generalmixed ration. Setting of norms of amount of forages and nutritive in the rations of control group was conducted on the Nozdryn norms, and in experimental – on new national norms.

On the basis of actual consumption nutrients and measurement of body weight compared the growth rate of heifers control and experimental groups. Depending on body weight, calculated the amount of fat, protein and energy in the body and heifers determined conversion ration of protein in the albumen body.

Consumption of nutrients of the ration of the experimental group heifers, by comparison to a control, in all periods was anymore ($P < 0,01$) and, on the average, made: dry matter on 20,6 %, metabolisable energy (ME) – on 20,8 %, raw protein – on 19,5 %, fissionable protein – on 19,2 %, unfissionable protein – on 27,9 %, raw cellulose – on 14,4 %, neutral detergent fiber – on 17,4 %, acid detergent fiber – on 17,8 %. Remnants feed, on the average, in control and experimental groups made 3–6 %.

Thus, the availability of crude protein ranged and compared to norms was in the control group over a period of 7–9 months – 95,8 %, for a period of 10–12 months – 102,2 for the period of 13–15 months – 90,7 %; in the experimental group, respectively, 103,8; 96,7 and 100,7 %. The amount of cleavable protein in the daily ration of heifers as compared to the norm in the control group was 80,5; 104,6 and 94,3% in the study – 104,8; 98,2 and 103 %,

respectively for periods of 7–9; 10–12 and 13–15 months, and non-cleavable protein – 66,4; 84,1; 76,7 % – in the control ration group and 84,9; 80,6; 84,0 % – heifers in the ration of the experimental group.

During the experience of live weight and average daily gains of the control group calves almost matched the standards in all periods of moderate cultivation, and in the experimental group, while the average daily gains and meet the standards of intensive cultivation, at the age of 15 months the live weight of heifers was 3,2 % less than the planned targets.

Protein costs in the initial period of the experiment (9 months) in the control and experimental groups were virtually identical and amounted to 938–939 g per 1 kg gain of heifers. In the future, costs per unit of protein heifer growth control and experimental groups were significantly different. In the period of 12 months and 15 for 1 kg of growth heifers spent in the control group, respectively in 1273 and 1523, in the test – 946 and 1203 g, or 15,8 and 21,01 % lower ($P < 0,05$).

Contents of fat in 1 kg of increase of heifers of experimental group in all periods of growing was higher ($P < 0,001$), comparative with a control group, and maintenance squirrel, opposite, was anymore ($P < 0,001$) at the heifers of control group. On the whole, is explained it by certain conformities to the law, pursuant to which with the increase of daily allowance increases and mass of animals in unit of increase is multiplied the amount of fat and the amount of albumen diminishes.

Conversion of raw protein in the albumen of increase with growth of age of heifers went down gradually. For all period of experience conversion of protein in control and experimental groups on the average made 0,17 and 0,137 accordingly. In a final period the coefficient of conversion of protein went down in a control group on 16,1 %, in experimental – on 27,2 %. – P. 119–122.

UDC 610:636.2-591.471.3-591.414

Havrylin P. N., Havrylina O. H. Conceptual aspects of neonatal farm animals.

Key words: neonatology, productive animals, organs of hematopoiesis and immune defense.

Productive breeding of economically developed countries is substantial loss by reducing the viability of animals that are in the same ecological environment of humans and are exposed to intensely active permanent influence of anthropogenic factors

Intensive exploitation of animals in order to obtain the maximum of productivity using of this non-traditional artificial feed, change in habitats with the elimination of a number necessary for normal growth and development of biological and abiotic factors is especially true for high-performance cattle farms operating with advanced technology, leading to reduce the duration and, consequently, economic use of animals, reproductive disorders, a sharp decrease in the viability of newborn animals.

In livestock in farms Ukraine much of newborns, especially calves, have a low vitality and a high percentage of morbidity. Recover animals are behind in growth and development, give rise to even more weak offspring, breeding value of animals with significantly reduced. Obtaining healthy farm animals is of particular importance in the application of modern technologies of milk production in large livestock facilities, the creation of which is the only accepted and uncontested by market filling relatively cheap animal products.

One of the adverse effects of intensive farming technologies is the emergence of a biological phenomenon – human "industrial" immune deficiency, resulting in animals born, raised and operated with significantly reduced compensatory adaptive capacity of the body.

The results of years of research conducted at the laboratory of physiology and functional morphology of farm animal of research center biosafety and environmental control agriculture resources Dnipropetrovsk State Agrarian and Economic University indicate particular importance in the present conditions of productive livestock changes of placenta barrier system state.

It is defined conceptual approaches to the problem of birth healthy neonates producing animals under intense anthropogenic pressure, as well as the main factors that affect their viability in the third stage of domestication. It is found that the negative factors of human activity in intensive livestock are decreasing placental barrier properties, resulting in dramatically increased permeability for high molecular weight complexes with antigenic properties. The main consequence of the breach of the placental barrier are negative changes morphogenesis of hematopoiesis and immune defense organs. Premature fetal antigenic stimulation of the body leads to increased development of reactive structures in the peripheral lymphoid organs reducing their potential functionality during the postnatal adaptation. To successfully resolve this problem, they must optimize the processing methods of animal husbandry, taking into account the biology of species, especially their historical and individual development, to provide a complete metabolism in animals as a basis for the development of effective placental barrier, control the quality and quantity of colostrum, create opportunities for maximum degree of realization of the potential of immunocompetent structures for the formation of a high immune status of calves during the postnatal adaptation, to introduce mandatory assessment organismic newborn status in order to predict their potential viability.

The main reason for reducing the viability of newborn animals in intensive livestock is the effect of anthropogenic factors in excess of functionality, that ensure the formation of adaptive-compensatory reactions of the body.

Addressing the increasing vitality of newborn farm animals must be integrated with the obligatory account the technology of keeping the biological characteristics of species that formed in the process of historical development, ensuring the formation of a full placental barrier during pregnancy and an evaluation of organism status of each newborn with determination towards future use. – P. 122–125.

UDC 636.2.082.453.5

Kozyr V. S., Burov V. O. Vaginal prolonged method of insemination of cows and heifers.

Key words: cow, artificial insemination, fertilization, vaginal prolonged method.

Artificial insemination is a bloodless aseptic surgical transplant of live sex cells (sperm) from a male in the genitals of females for a particular physiological state (presence of Mature follicle with the egg). In practice, cattle mainly used three methods of artificial insemination of cows and heifers: viso-, mano- and recto-cervical. Now in the world, including in Ukraine, is widely used recto-cervical method, but it has certain disadvantages.

Studies on artificial insemination of cows vaginally-extended method was conducted in 2012 on cows of red steppe breed in agribusiness "Naukova" Dnepropetrovskaya region. The experimental group of cows (40 goals) omental, based on new wag remained to be nominal subjects-the prolonged method in the appearance of their signs of sexual arousal (anxious behavior, refusal to feed, redness of the labia, estrus).

Such animals in the morning (from 6 am to 7 am) or evening (from 18 to 19 hours) into the vagina once injected, the pipette is a capillary, which is pre-filled with the sperm with a syringe, removed after 24 hours. In both groups of housing, milking and feeding were the same. Used for-ice-cream-thawed sperm of the same bull-producer with the rating of 4,5 points. Thawed semen in a water bath at a temperature of 38 °C by the conventional method.

For vaginal insemination of animals-prolonged method was made pipette-capillary polystyrene of a certain stiffness. The technology process is as follows:

1. During sexual arousal, the animal is fixed in a machine or machine
2. First of all, you need to prepare the pipette-capillary with semen, then put it in a plastic case to avoid infection. Before insemination the expanded portion of the pipette, the sperm move to the edge of the box, holding it through the film. The left hand is withdrawn sex lip cow in the side until you see pink mucosa. Right hand extended part of the pipette with semen injected into the vagina, with the case gradually collect "accordion", and then completely removed from the capillary part of the pipette.
3. After the introduction of the pipette into the vagina of the animal produce in the pasture or in a stall. Through the day the pipette is removed from the vagina and dispose of.

With artificial insemination vaginal prolonged method the impregnation rate of the cows was 10 % higher compared to the recto-servicelink. Reduced labor costs and funds for one insemination of cows and heifers. – P. 125–127.

UDK 636.2.082:575.827

Gill M. I., Kovalenko V. P. Monitoring of gene pool of dairy cattle breeding of country and methods of acceleration of breed-stock.

Key words: *methods of estimation of signs, gene pool, pedigree work, suckling cattle, genetics- selection measures, theory of breed-formation.*

The analysis of existing concepts of formation and improvement of selection and breeding work with cattle of the dairy direction of efficiency. A powerful impetus for the use of methods of population genetics is the possibility of using modern computers to collect, store and analyze genetic information in populations. On the basis of integration of methods of population genetics, systems of computers, new methods of artificial insemination and long-term preservation of semen, methods of biotechnology has created a system of large-scale selection, which helped to transform the breeding of dairy cattle in a scientific system and ensure the effectiveness of breeding 2–3 times.

The introduction of large-scale breeding to improve dairy breeds has caused doubts among some scientists about the feasibility and efficiency of breeding. Discussion was held, the result of which proved the feasibility of breeding lines. It is established that the number of lines in the breed is determined by number, age, habitat and the level of factory perfection of the breed. This method allows linear dilutions to distribute or breed - type of dairy cattle on individual structural groups of animals and plan selection system in commercial farming, which excludes the spontaneous inbreeding.

In recent times expressed concern regarding the preservation of the gene pool of farm animals. Simultaneously with the creation of new breeds to replace local breeds deselected a certain trend of productivity has led to a sharp decrease in the number of domestic breeds that can't compete with the specialized breeds. However, they remain carriers of valuable genetic qualities and other complexes, without which further breed-formation process would be one-sided. The disappearance of each of the species leads to irreversible loss of genes, causing a variety of economically useful traits. Therefore, we need a national program of conservation and rational use of domestic gene pool.

Further genetic improvement in cattle to be effective in creating the conditions of an open population, where with equal success can be applied as purebred breeding and crossbreeding between the breeds. But the animals must meet established standards of performance and the type of structure of the body. Created an objective necessity in the development of large-scale events in the transformation of the gene pool of animal breeds. For the near future one of the main directions of scientific-technical progress in dairy cattle breeding will be the development and implementation of methods to preserve the gene pool, use stabilizing and correction of the action of natural selection, a study of the optimal proportion of inheritance for improving breeds, development of system genetics and breeding monitoring intra-population processes in herds of dairy cattle, the transformation of existing rocks quality products.

The basic principles of the theoretical concepts of breed-formation are: 1) radical reconstruction of the existing gene pool with the world's best selection material; 2) development of modern methods of obtaining custom farming, testing, evaluation and use of sires; 3) developing methods for the identification and objective independent assessment of the phenomenon and the genotype of breeding animals; 4) development of new standards for growth of rearing, corresponding systems and schemes for its cultivation; 5) gene pool preservation of traditional local breeds through identification of farms-reserves, some sperm, embryo and genebanks; 6) new aspects of the use of crossbreeding and inbreeding in the breeding of the breeds and types of farm animals; 7) theoretical justification for the creation of synthetic populations and lines; 8) the beginning of a new one for livestock Sciences – biotechnology plant breeding and theoretical determination of its main elements; 9) the use of interior tests to predict animal performance.

The monitoring of scientific concepts and research evidence sufficient variety breeding and genetic programs with breeds of different countries, but their main criterion is the value of the breeding progress and profitability, whereas the primary basis of genetic and population-based methods and their perfection. It is noteworthy that the concept of biotechnological breeding in dairy cattle of the country, probably, correction of its dogmas methods of genomic. – P. 127–133.

UDK 636.2.033 (477)

Ugnivenko A. M., Humenny V. D., Ostapenko A. I. Road to problems of beef production in Ukraine.

Key words: *beef cattle, pedigree breeding, high quality beef, natural grasslands cultural grasslands, energy feed.*

At the initial stage of increasing meat production can be achieved by improving utilization of existing in the country the number of dairy Hu-days. In recent years, dairy farming in the whole country disrupted the structure of herds. Is the optimal proportion of cows in them – 35–38 % 58,3%, including in agricultural enterprises of 38,7 %, in households and 68,6 %. This leads to a low fraction of the main source of meat-calves and calves, which are in growing or fattening. From a significant part of farmers lose calves after their birth to save milk for implementation and reduce costs in their cultivation. The normalization of the structure of dairy herds will increase the General livestock of cattle and beef production. This is the most cheap, affordable and fast cue, the way to increase meat production from the country's dairy in Golf me. The rest of the beef need to developing specialized beef cattle, which is based on the use of special breeds and technologies produces only one type of product-calves. Now there are less than 100 thousand heads of beef cattle, including about 40 thousand cows.

There are a number of obstacles that hamper the development of specialized meats-tion of cattle breeding in Ukraine. Among them-unreasonable purchase prices for beef from beef cattle, not provide a break-even production and reduced investment potential; availability of economically unreasonable to producers budgetary subsidies aimed at the effective management of beef cattle; lack of integration of n-VA, processing and sale of meat products given its quality indicators, resulting in unreasonably low prices for yalovychi-well; low solvency of the population; the lack of specialized pred-STV with the cultivation and intensive fattening young growth of large horned bad-would that have a high

level of technological equipment; the establishment of beef cattle through imports of livestock and breeding your own meat breeds, but not at the expense of the trademark stud with crossbreeding livestock; management of meat cattle to be on an intensive basis with the high costs of funds on sophisticated technological equipment and capital construction; use on farms with utrimanni breeding stock and calves growing technology and means of production, is not peculiar to specialized meat cattle breeding, zooms et their high energy intensity and production cost; lack of knowledge, the herd management of beef cattle; getting a majority negramotnov licek milk and combined direction of productivity in households, making it difficult to use them to create a marketable stud meattion of cattle. A huge drawback of specialized beef cattle breeding in Ukraine is a violation of the rational relation between tribal and com-commoditytime-called. If in most countries the breeding herd range from 5 to 15 % of the total livestock in Ukraine they hold more than half of the animals.

So in the coming years to successfully develop beef cattle should focus on the following major areas: promoting production in the beef commodity beef cattle; to encourage the cultivation negramotnov heifers in farms and individual peasant farms for agricultural enterprises, which will deal with commodity beef cattle; implement an effective system of reproduction, breeding, age-Tzu, animal husbandry and processing of beef, hides and by-products for beef cattle; to promote beef cattle, create a demand for beef from specialized beef cattle. – P. 133–139.

UDC 636.4.082.43

Kozyr V. S., Khalak V. I., Zeldin V. F., Cherniavsky S. E., Chegorka P. T. Evaluation of the effectiveness of different methods of pig breeding.

Key words: sow, boar-manufacturer, genotype, method of breeding, reproductive ability, the evaluation index, variability, correlation.

Intensification of the breeding process in the pig industry envisages introduction of innovative methods for assessment of breeding value, the use of various breeding schemes and their economic evaluation. Specified determines the relevance and direction of our research.

The aim of this work is to investigate the effectiveness of the use of boars of Landrace genotype "Optimus" in conjunction with the sows of large white breed, and to determine the level of correlation between absolute and integrated indices of reproductive ability. Found that the best peak reproductive ability was characterized by the sows of large white breed in combination with boars of Landrace (II experimental group). They exceeded peers in the control group on multiple pregnancy of 0,4 pigs (td = 0,49; P<0,95), large-fruited – 0,07 g (td = 1,09; P<0,95), the weight of the nest at the time of weaning – 5,1 kg (td = 1,5; P<0,95), live weight 1 pig – 0,9 kg (td = 4,28; P>0,999), average daily gain in live weight of piglets to weaning – 0,027 kg (td = 3,69; P>0,999).

Use two-breed sows in combination with the boars of the genotype "Optimus" (experimental group III) will provide the highest level grate foetus, mass of nests and live weight 1 pig at time of weaning and average daily gain in live weight of piglets to weaning. The difference, compared to animals and the control group was 0,25 kg (td = 4,31; P>0,999), 9,5 kg (td = 2,11; P>0,95), 2,2 kg (td = 7,85; P>0,999) and 0,065 kg (td = 6,31; P>0,999). The coefficient of variation of signs of reproductive ability ranged from 6,25 (II trial group; live weight 1 pig at the time of weaning, kg) to 26,30 % (experimental group III; number of piglets at the time of weaning, the goal).

Calculation of coefficients of pair correlation between the absolute and integrated indicators of reproductive ability of sows indicates the presence of links of different direction and strength. So, the animals of control and test groups showed a reverse in direction, medium and close relationship between the twins and large fruit size ($r = -0,562 - -0,900$), direct in the direction and average strength between the twins and ground nests at the time of weaning ($r = +0,489 - +0,526$).

Vysocany correlation found between multiple pregnancy and the index Lasha modification N. D. Berezovsky ($r = +0,745 - +0,929$). The same trend is observed for the characteristics "weight of the nest at the time of excommunication", and the index Lasha modification N. D. Berezovsky ($r = +0,855 - +0,941$). The power of the connection between the indicator "integrated indices of reproductive ability of sows farrow and large sows ranges from $-0,175 \pm 0,2842$ to $0,361 \pm 0,2692$.

The indicator "weight of the nest at the time of weaning" describes the norm of reaction of genotype to the environment. Correlation between the index Lasha modification N. D. Berezovsky and comprehensive indices of reproductive ability of sows in all groups the strength varies from medium to strong at different levels of probability.

It is established that the maximum increase of production obtained from animals of experimental group III and 9,5 kg in animals of the II group it was 5,1 kg.

The cost of the additional products obtained from animals II and III experimental groups, calculated per 1 head was above 7,0 and 13,0 %. – P. 140–143.

UDC 636.2.087.72

Golushko O. G., Nadarinskaya M. A., Kozinets A. I. Rational use of spropel in feeding highlyproductive cows.

Key words: highly productivi cows, live weight, yield, spropel, feeding, feed additives, biochemices indices blood serum.

This article is devoted to study of use and effect of feed additive "Agroprodukt" consisting of rapeseed meal and spropel on dairy cows' performance.

The scientific and economic study was carried at RDUP "Zhodino AgroPlemElita" of Smolevichy district Minsk region with two groups of highly productive cows of black-motley breed in primary stage of lactation. The animals were selected taking into account age, body weight and milk yield in the last completed lactation on the principle of analog pairs (average body weight – 550 kg, each group of 12 animals). The difference in feeding consisted in the fact that one control group received compound feed with rapeseed meal without spropel, 2 group – compound feed with feed additive "Agroprodukt". The duration of the preliminary period was 10 days, experimental period – 93 days.

Experiments have shown that the use of feed additive "Agroprodukt" within the compound feeds for lactating cows to replace the same amount by weight of rapeseed meal, increases content of minerals and vitamins and has positive effect on productivity of dairy cows. Feeding lactating cows as part of compound feed with additive "Agroprodukt" led to reduction in feed costs for production of 1 kg of milk by 6,0 %, contributing to profit raise from one experimental animal in the amount of 335 thousand rubles due to the difference in cost of product sold, obtained during the period of studies excluding the cost of production. Extra profit from 1 cow of experimental group during the study period made 147 thousand rubles. – P. 144–151.

UDC 636.237.1.082.14.[4777/251.1]

Pishchan II. S. Adaptation and loss products of schwyz breed cow different ecological origin on a large industrial complex in the steppe zone Ukraine.

Key words: *Schwyz breed cow, lactation, service period and the period between calving, milk yield, decrease of milk yield, infertility, adaptation index.*

Paratypic factors of industrial complex and adaptive plasticity Schwyz breed cows determine the state of physiological and biochemical processes in the organism. When the insemination index is lower, then closer to normal service period, lactation period and period between calving and higher physiological activity of lactating organism of animals and a higher level of milk production. This significantly reduces the period of infertility of cows and associated loss of production.

Determined that Schwyz cows in the second lactation, which has fully passed the adaptation period in the first period of industrial productive have high level of production. So, for one day period between calving – 22 to 25 kg of milk. Thus, the first and second experimental groups of Schwyz cows have the highest ratio and respectively in averages 23,5 and 24,8 kg of milk in the third group of control animals, the figure lower, respectively, 5,96 and 10,89 % ($P < 0,05$).

It is established that along with increasing productivity, infertility and loss of production is not reduced in cows of the third lactation, which two productive periods adapted to the climate and weather, and harsh conditions in the industrial sector. In cows of Schwyz breed Austrian environmental origin lactating functional activity of the organism increased, while in Schwyz cows of local introduction this figure has dropped slightly. In experimental cows Schwyz bred of I group the milk yield is 28,4 kg, the second group of cows the figure lower at 10,94 % and is average of 25,6 kg.

Relatively lowest physiological activity of the organism, in the third lactation, characterized animals of the third (control) group, in which the rate of milk yield per day of period between calving by level 21,3 kg, which is less than in the second lactation at 3,76 % and the rate of the second group of cows in the third lactation is 20,19 % ($P < 0,001$), and analog of animal I group – by 33,33 % ($P < 0,001$).

Of particular importance are the standards of reactions organism to operating conditions Schwyz firstborn cows born to mothers imported and grown in the industrial sector. All firstborn cows are characterized by satisfactory physiological activity of the organism and milk production rates. Thus, the milk yield is in the second and third (control) group is on average respectively 20,5 and 20,6 kg. However, this figure of I group is higher and is 11,26 %, respectively ($P < 0,001$) and 10,82 % and an average of 23,1 kg.

The main indicator of technological exploitation of cows on the industrial complex is the period from calving to conception. Young animals with their lack of adaptive plasticity to conditions of exploitation have low level of fertilization after calving.

Thus, for purebred cows Schwyz breed in severe operating conditions in large industrial complex period from calving to conception does not fall below 105,2, reaching 157,3 days. Moreover, in the second lactation cows and firstborn the service period is 105,2–110 days, characteristic for respectively 21,9 and 17,6 % of livestock, in this period lactating animals of third lactation period is fertilized least. For these animals is to 65,7 % characteristic service period by 157,3 days. In 42,9 and 30,3 % of cattle firstborn and second lactation service period is 153,5 and 150,1 respectively days. – P. 151–159.

UDC 636.014:636.4

Bordun A. N., Khalak V. I., Grabowska A. S. The influence of various factors on the survival and fertilizing capacity of boar semen

Key words: *boars, semen, temperature, cooling, equilibrate, cryopreservation.*

In the development of the pig industry plays an important role system of the organization of the reproduction of livestock, the efficiency of which can improve the wide use of artificial insemination, in particular, cryoconservation with boar semen.

Cryopreservation of sperm allows a short time to improve the genotype of the livestock, to replace the expensive import of breeding boars the import of frozen semen, to eliminate the loss of animals associated with adaptation to different conditions of feeding and maintenance, to prevent the risk of importation of pathogenic organisms.

The aim of the research is to reveal certain regularities of the mechanism of freezing and thawing to optimize long-term storage of sperm of boars.

The studies were conducted in the laboratories: Institute of agriculture of North-East of NAAS and Sumy state selection centre.

Semen from boars received chiropractic method, in this case taken a concentrated ejaculate suspense secret of glands of the second phase of ejaculation and partly in the third.

Semen collection was performed from high-yielding breeding boars aged 24 to 36 months breeds large white, 5 goals and 3 large white head. Obtained from boar sperm (36 ejaculates) was estimated on quality indicators: volume, motility, concentration, survival.

Performance mobility was determined under phase-contrast microscope with software, evaluation of mobility of sperm SpermVision. The concentration of sperm cells was assessed in native semen photometer SpermaCue.

Sperm obtained from boars after the evaluation of quality indicators was freezing technology, Institute of pig breeding and agroindustrial production with some own modifications and additions according to the analysis of literary sources.

The functional activity of sperm was determined on 36 samples: in native semen +36,0 °C, diluted +17,0 °C, in the phase equilibria +5,0 °C and after freezing and thawing sperm +26,0 °C. In our studies, the freezing and thawing of sperm obtained the rate of mobility of 36,4 %.

The incubation of freshly obtained boar semen at room temperature from 0 up to 2 hours on its activity after thawing and within three hours storage showed that the time of incubation of freshly obtained boar semen at room temperature for 1,5 hours. positive impact on the quality of thawed semen of boars.

The difference in terms of "activity" in two hours after thawing, and at the beginning of incubation is 10,6 % (td = 2,19; P>0,95) is 1 hour and 12,3 % (td = 2,47; P>0,95) is 2 hours and 12,3 (td = 2,53; P>0,95), after 3 hours of 12,6 % (td = 2,28; P>0,95).

The survival rate of sperm cells in samples frozen at a rate of 0,05, 0,5 and 1,0 °C per minute did not differ significantly, indicating a certain level of "tolerance" of the sperm of boars to increased cooling rate in the investigated temperature range. However, the cooling rate exceeding 1,0 °C per minute leads to probable damage of sperm cells and their fertilizing capacity after thawing. Using a cooling rate of 1,0 °C per minute in the temperature range from +15,0 to +5,0 °C does not lead to a significant decline in the sperm quality of boars after thawing compared to control (0,05 °C per minute). The increase in cooling rate reduces the duration of processing of semen for cryopreservation from 180 to 10 minutes.

In studying the effect of the length of time equilibrar diluted boar semen on the indicators of activity after thawing revealed that the increase in time equilibrar boar semen has a positive effect on its activity after deconstruc. In particular, the clock equilibrate sperm resulted in low activity of sperm cells during the 3-Godinho incubation.

For a three-hour equilibra activity of the sperm after thawing was higher than after 1-hour by 8,0 % , this trend continued and after three hour exposure of sperm at the temperature of +17,0 °C, after thawing at 8,2 % . – P. 159–163.

UDC 619: 616.993.192.1: 635.5

Marshalkina T. V., Senturin V. V. Biological situation on gastrointestinal invasions chickens and turkeys in the conditions of steppes of Ukraine.

Key words: epizootology, helminth invasions, eimeriosis, extensiveness, intensity, mixed invasion, chickens, turkeys.

The data of their own research and dissemination of helminthosis and eimeriosis invasions of chickens and turkeys in farms of different forms of ownership of the steppe zone of Ukraine in 2014–2015. The features of current infestations depending on the time of year, the type and age of the bird. Established species composition agents of parasitic diseases the main association of parasites.

Parasites of birds is one of the most serious obstacles to the development of poultry farming, which cause significant losses. The basis for the comprehensive protection of poultry against parasitic diseases and their prediction is epizootological monitoring, whose main task is to receive and analyze data on the spread of ecto- and endoparasites. Among endoparasites of poultry helminthosis and eimeriosis occupy the dominant position and cause severe diseases.

Epizootological research on parasitic diseases of chickens and turkeys was carried out in 25 specialized poultry farms and private households of citizens located in the steppe zone of Ukraine, according to various technologies poultry throughout the year. For the period 2014–2015 biennium conducted 128 autopsies, subjected research 2490 samples manure from chickens and turkeys of all ages.

According to the research in the winter-spring season in the adult population of hens registered several species intestinal helminthes: *Ascaridia galli* and *Ascaridia dissimilis* with extensiveness of invasion (EI) ranged from 5 to 100 %; *Capillaria obsignata* of EI – from 8 to 100 %; *Heterakis gallinarum* with EI – from 4 to 100 %, *Thominx collaris* of EI – from 16 to 24 %. In chickens adjoining the farm economy were recorded *Trichostrongylus tenuis*, EI varied from 28 to 100 % of low intensity (single worms). In chickens, especially in spring, growing intensity of invasion (II) – tens of worms of different stages of development. In addition to these pathogens in chickens was detected lesions *Raillietina cesticillus*, EI was 40 %.

In chicken of farms and adjoining the farm economy registered *Eimeria tenella*, *E. acervulina*, *E. maxima* and *E. necatrix*, EI ranged from 8 to 100 %. The intensity of invasion ranged from single to tens of oocysts in the field of view of the microscope.

Turkeys were infested *Ascaridia dissimilis* from EI 20 to 100 %, *Capillaria obsignata* EI – from 44 to 100 %, *Heterakis gallinarum* from EI 20 to 100 % and *Eimeria adenoides*, *E. meleagridis* and *E. gallopavonis* EI of 100 %.

In summer and autumn in chickens registered four species of worms: ascaridias of EI from 8 to 100 % of capillarias EI – from 8 to 100 % of heterakises EI – from 32 to 100 % and EI raillietinas of 24 %. In turkeys – three types of worms: ascaridias EI from 24 to 100 %, capillarias of EI from 72 to 100 % and EI heterakises of 100 %.

In conducting epizootic monitoring except monoinvasions observed association helminthes-protozoal and mixed helminthes of invasions. – P. 163–166.