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Узбек И.Х. Значение клубеньковых бактерий люцерны и эспарцета в толще технозоки-систем / **И.Х. Узбек, П.В. Волох, А.А. Мыцык** // Вісник Дніпропетровського державного аграрно-економічного університету. – 2015. – № 3(37). – С. 6–11.

Установлено, что в среде обработанных карьерных территорий развиваются только те виды растений, которые обладают высокой экологической пластичностью своих корневых систем. Это бобовые культуры, прежде всего люцерна и эспарцет, способные фиксировать азот из атмосферы. Наибольшее количество клубеньков обнаружено в насыпном слое почвенной массы. В красно-бурых и серо-зеленых глинах клубеньки люцерны и эспарцета образовывались в основном в верхнем 40-сантиметровом слое пород (78–98 %). Подсчитано, что корни люцерны совместно с клубеньковыми бактериями и свободноживущими азотфиксаторами ежегодно могут накапливать в слое 0–20 см около 350 кг/га азота.
Ключевые слова: отвальная масса, рекультивация, экотоп, клубеньки бактерий.

Ващенко В.В. Экологическое испытание современных сортов пшеницы мягкой озимой в условиях подзоны Северной Степи Украины / **В.В. Ващенко, Н.Н. Назаренко** // Вісник Дніпропетровського державного аграрно-економічного університету. – 2015. – № 3(37). – С. 12–16.

Проведён анализ урожайности и её структуры у 30 сортов пшеницы мягкой озимой в условиях подзоны северной Степи Украины. Выявлены перспективные более продуктивные сорта в сравнении со стандартом. Наиболее перспективным по всем данным оказался новый сорт пшеницы мягкой селекции ДГАЭУН Комерційна. У него высокие показатели урожайности, массы тысячи зёрен, массы зерна с колоса, высокая стабильность этих признаков, стоек к полеганию и болезням. Исследованы особенности формирования урожая в зависимости от генотипа, климатических условий и влияния отдельных количественных признаков.
Ключевые слова: пшеница мягкая озимая, сорт, урожайность, структура урожайности, кластерный анализ.

Назаренко Н.Н. Депрессия под действием некоторых химических мутагенов на примере пшеницы озимой / **Н.Н. Назаренко, В.В. Ващенко** // Вісник Дніпропетровського державного аграрно-економічного університету. – 2015. – № 3(37). – С. 17–24.

Исследованы особенности проявления мутагенной депрессии на росте и развитии растений пшеницы мягкой озимой в первом поколении при действии ДАБ и ДМС. Наиболее информативными в плане мутагенной

депрессии в М1 поколении растений сортов пшеницы мягкой озимой были признаки схожести и выживания, фертильности пыльцы и признаки структуры урожайности: высота растений, масса зерна с главного колоса, масса тысячи зёрен. Установлена специфичность и степень проявления мутагенной депрессии в зависимости от дозы мутагена и генотипа.

Ключевые слова: пшеница мягкая озимая, химические мутагены, мутагенная депрессия, всхожесть, выживание, структура урожайности.

Божко В.Ю. Урожайность растений ячменя озимого в зависимости от минеральных удобрений / **В.Ю. Божко, И.И. Ярчук, А.В. Лыман** // Вісник Дніпропетровського державного аграрно-економічного університету. – 2015. – № 3(37). – С. 25–28.

Исследовано влияние доз и соотношение минеральных удобрений на рост, развитие растений, в частности во время вегетации, и на урожайность ячменя озимого. Выяснено, как влияют минеральные удобрения на зимостойкость культуры. Определены оптимальные комбинации удобрений, которые обеспечивают максимальную стойкость растений к неблагоприятным условиям зимнего периода.
Ключевые слова: озимый ячмень, зимостойкость, урожайность, удобрения, доза внесения, азот, фосфор, калий.

Якунин А.А. Влияние способа основной обработки почвы на формирование урожайности зерна кукурузы / **А.А. Якунин, Л.И. Храмцов, О.В. Трубилов** // Вісник Дніпропетровського державного аграрно-економічного університету. – 2015. – № 3(37). – С. 29–31.

Изложены результаты исследований по влиянию способа и глубины основной обработки почвы на формирование зерновой продуктивности кукурузы. Замена вспашки на 25–27 см рыхлением почвы на такую же глубину положительно влияла на уровень засоренности посевов, запасов доступной влаги в почве, урожайности зерна кукурузы и на экономическую эффективность ее выращивания. Установлено ухудшение этих показателей по дискованию на 12–14 см и нулевой обработке.

Ключевые слова: кукуруза, обработка почвы, сорняки, почвенная влага, урожайность зерна, экономическая эффективность.

Носов С.С. Контролирование засоренности посевов кукурузы с использованием почвенных и страховых гербицидов / **С.С. Носов** // Вісник Дніпропетровського державного аграрно-економічного університету. – 2015. – № 3(37). – С. 32–36.

Приведены результаты изучения сравнительной эффективности действия почвенных

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и страховых гербицидов, их комбинаций на количество и воздушно-сухую массу сорняков в посевах кукурузы. Установлены преимущества применения исследуемых гербицидов перед использованием только препаратов почвенного действия путем определения процента уничтоженных сорняков, снижения их воздушно-сухой массы и повышения урожайности зерна культуры.

Ключевые слова: кукуруза, гербициды, сорняки, урожайность, сроки сева.

Геллер А.И. Экологизация технологий выращивания сои в Степи Украины / **А.И. Геллер, В.Т. Пашова, Р.А. Корбанюк, С.Н. Лемишко** // Вісник Дніпропетровського державного аграрно-економічного університету. – 2015. – № 3(37). – С. 37–40.

Доказано, что повышение полевой всхожести, активизация процессов дыхания и питания сои при инкрустации семян биопрепаратами и бишофитом способствовало повышению урожая и его качества. При экологизации технологий выращивания сои в Степи перспективным является прием инкрустации семян сои биопрепаратом АКМ и бишофитом, что связано с существенными изменениями в процессе обмена веществ, перестройкой ряда метаболических систем на геномном уровне. **Ключевые слова:** соя, биопрепараты, инкрустация, АКМ, бишофит, “строй” протеин, белок.

Мостипан Н.И. Особенности почвообразования на границе перехода Лесостепи в Степь / **Н.И. Мостипан, Ф.Ф. Топольный** // Вісник Дніпропетровського державного аграрно-економічного університету. – 2015. – № 3(37). – С. 41–45.

Исследованы почвы водоразделов и склонов различных экспозиций и крутизны в центральных районах Кировоградщины. Показано отсутствие четкой границы между Лесостепью и Степью. Целесообразно выделять переходную полосу шириной 30–40 км, в пределах которой зависимо от рельефа существуют ландшафты лесостепные и степные.

Ключевые слова: почвы, Лесостепь, Степь, переходная полоса, черноземы типичные, обычные.

Домарацкий Е.А. Оценка и моделирование формирования урожайности сортов пшеницы мягкой озимой с применением метода искусственных нейронных сетей / **Е.А. Домарацкий, В.И. Пичура, А.А. Домарацкий** // Вісник Дніпропетровського державного аграрно-економічного університету. – 2015. – № 3(37). – С. 46–52.

Представлены результаты анализа, оценки и нейромоделирования влияния биологических протравителей на формирование урожайно-

сти различных сортов пшеницы в условиях изменений климата степной и сухостепной зон. Прибавка урожайности пшеницы составляла 0,36–4,7 %. Отрицательный баланс урожая наблюдался при применении химического протравителя Раксил ультра – 6,01 %. Применение биопрепарата Триходермин в предпосевной обработке обеспечило самую высокую энергию прорастания семян. Наибольший вклад в реализацию урожайности внес фактор – годы исследований (климатические условия) – 42,26 %. Метод искусственных нейронных сетей позволил определить нелинейные закономерности влияния исследуемых факторов и создать адаптивную многослойную регрессионную модель для высокоточного прогнозирования урожайности (90,4 %). **Ключевые слова:** биопрепараты, пшеница мягкая озимая, урожай, моделирование, дисперсионный анализ, нейронные сети.

Онопrienко Д.М. Влияние химической мелиорации на солевой режим почвы (на примере Днепропетровской области) / **Д.М. Онопrienко, Т.К. Макарова** // Вісник Дніпропетровського державного аграрно-економічного університету. – 2015. – № 3(37). – С. 53–57.

Исследовано влияние фосфогипса, как химического мелиоранта, на солевой режим орошаемых солонцеватых черноземов. Определены оптимальные нормы внесения и установлено положительное действие мелиоранта на изменение химизма (типа) и степени засоления почвы в условиях орошения и без него. Особое внимание уделено повышению эффективности химической мелиорации при орошении.

Ключевые слова: солонцеватые черноземы, орошение, химическая мелиорация, фосфогипс, химизм и степень засоления почвы.

Термостойкость семян гибридов кукурузы и особенности их послеуборочной обработки / **М.Я. Кирпа, Н.А. Стюрко, Л.Н. Бондарь, Ю.С. Базилева** // Вісник Дніпропетровського державного аграрно-економічного університету. – 2015. – № 3(37). – С. 58–63.

Приведены результаты исследований качества семян гибридов кукурузы и особенности их послеуборочной обработки в условиях типичного кукурузообработывающего завода. Установлены стадии обработки, которые подлежат технической модернизации, определены оптимальные температурные режимы с учетом сортовых особенностей гибридов, их уборочной влажности и температуры нагрева.

Ключевые слова: семена, гибриды кукурузы, послеуборочная обработка, сушка, всхожесть, качество.

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Ридей Н.М. Рекреация в Украине: изученность, перспективы развития рекреационных территорий / **Н.М. Ридей, Т.Ф. Хитренко** // Вісник Дніпропетровського державного аграрно-економічного університету. – 2015. – № 3(37). – С. 64–69.

Проанализирован понятийно-категориальный аппарат рекреации в Украине с использованием государственных нормативно-правовых актов, научных, научно-методических и справочных литературных источников. Установлены особенности структурной организации рекреационной сферы в Украине. Подчеркнуто, что существует необходимость уточнения многих понятий на общегосударственном законодательном уровне. Основания могут быть научные наработки ученых в этом контексте. Представлена структурно-организационная схема понятийно-категориального аппарата рекреации в Украине.

Ключевые слова: рекреация, рекреационная отрасль, рекреационные ресурсы, рекреационная деятельность, рекреационные территории, рекреационные объекты, рекреационная сфера.

Технологические аспекты производства зерновых продуктов с высокой биологической ценностью / **Ю.А. Чурсинов, С.Ю. Миколенко, В.Ю. Соколов, В.В. Биленко** // Вісник Дніпропетровського державного аграрно-економічного університету. – 2015. – № 3(37). – С. 70–75.

Обсуждаются основные аспекты внедрения безотходных технологий производства зерновых продуктов и ключевая роль в таких технологиях влаготепловой обработки зерна, как средства целенаправленного изменения его технологических свойств. Освещена рациональность технологий цельнозерновых продуктов питания, которые позволяют сократить энергетические и материальные издержки производства в общем цикле на 25–30 % по сравнению с традиционными. Рассмотрены недостатки технологических решений, в частности повышение уровня микро-биологических рисков, их устранение, безопасность пищевых продуктов.

Ключевые слова: зерно, биологическая ценность, гидротермической обработки зерна, микотоксины.

Сокол С.П. Выкапывание корнеплодов усовершенствованным копачом вибрационного действия / **С.П. Сокол** // Вісник Дніпропетровського державного аграрно-економічного університету. – 2015. – № 3(37). – С. 76–78.

Предложена математическая модель процесса вибрационного выкапывания корнеплодов. Предусмотрен режим вибрации, при котором обеспечивается ускоренный вынос

корнеплода с почвы, а это дает возможность уменьшить длину лемеха, что является дополнительным фактором снижения сопротивления при выкапывании.

Ключевые слова: корнеплод, почва, выкапывание, рабочий орган, лемех (клин), сопротивление, вибрация.

Карлова Л.В. Биохимические показатели крови телок украинской красной молочной породы в зависимости от продолжительности их внутриутробного развития / **Л.В. Карлова** // Вісник Дніпропетровського державного аграрно-економічного університету. – 2015. – № 3(37). – С. 79–82.

Установлено, что телки со средним периодом утробного развития за большинством показателей крови опережают своих сверстниц с коротким и удлиненным утробным периодом. Полученные данные свидетельствуют о более интенсивном обмене веществ в организме телок и могут быть использованы для ранней оценки их продуктивных качеств. Определена достоверная отрицательная корреляционная связь между надоем и содержанием жира в молоке коров с различной продолжительностью утробного развития.

Ключевые слова: кровь, продуктивность, обмен веществ, ферменты, утробное развитие, корреляция.

Китаева А.П. Продуктивные качества потомства овцематок каракульской породы разного репродуктивного возраста / **А.П. Китаева, Л.В. Кременчук** // Вісник Дніпропетровського державного аграрно-економічного університету. – 2015. – № 3(37). – С. 83–87.

Проведено комплексное исследование эффективности увеличения продолжительности продуктивного использования овцематок асканийской каракульской породы и продуктивных качеств их потомства. Установлено, что хорошую плодовитость матки сохраняют до 10-летнего возраста, а их осеменение в 9-месячном возрасте позволяет получать по 130 ягнят на 100 маток. Наиболее продуктивное потомство имеют матки среднего репродуктивного возраста (3–5 лет).

Ключевые слова: репродуктивный возраст, плодовитость, овцематки, потомство, живая масса, среднесуточный прирост, завитки.

Черненко А.Н. Формирование экстерьера и конституции у коров украинской красной молочной породы / **Черненко А.Н.** // Вісник Дніпропетровського державного аграрно-економічного університету. – 2015. – № 3(37). – С. 88–90.

Приведены результаты исследования особенностей экстерьера и конституции у коров

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центрального зонального заводского типа украинской красной молочной породы. Определены лучшее развитие туловища, более выраженный молочный тип, прочное телосложение у коров с большим соотношением условного объема грудной клетки и массы тела. При отборе предпочтение рекомендуется отдавать животным крупно- и средне-объемного типа конституции.

Ключевые слова: развитие грудного отдела, объемно-весовой коэффициент, промеры экстерьера, индексы телосложения.

Филеп Р.Г. Оценка продуктивных качеств овец закарпатского внутривидового типа породы прекос / **Р.Г. Филеп** // Вісник Дніпропетровського державного аграрно-економічного університету. – 2015. – № 3(37). – С. 91–94.

Изложены результаты исследований оценки продуктивных качеств овец закарпатского внутривидового типа породы прекос. Установлено, что плодовитость овцематок отвечала 108,2 %, а при отъеме получено в среднем 82,2 головы ягнят на каждые 100 овцематок. Молочная продуктивность овцематок, которая за первые 20 дней лактации составила 23,26 кг молока в группе с одиночками и 35,0 кг с двойней, положительно повлияла на рост, развитие и продуктивные качества молодняка, способствовала реализации генетического потенциала скороспелости приплода, обеспечила вскармливание ягнят, родившихся как одиночками, так и двойнями, которые при отбивке имели живую массу от 24,8 до 26,1 кг.

Ключевые слова: Закарпатский внутривидовый тип, оценка, производительность, живая масса, молоко, среднесуточные приросты.

Беженар И.Н. Проблемные аспекты развития овцеводства и пути их решения / **И.Н. Беженар** // Вісник Дніпропетровського державного аграрно-економічного університету. – 2015. – № 3(37). – С. 95–103.

Рассмотрены современные тенденции и проблемы развития отрасли овцеводства в контексте динамики производства шерсти и баранины. Проведена комплексная оценка современного состояния и экономической эффективности овцеводства с учетом природно-климатических зон Украины и регионально-исторических особенностей функционирования отрасли. Обоснованы первоочередные направления возрождения, стабилизации и развития отрасли овцеводства в Украине путем проведения ряда мероприятий на макро- и микроуровнях.

Ключевые слова: отрасль овцеводства, экономическая эффективность, природно-климатические зоны, диверсификация.

Нормирование кормления лактирующих овцематок по дефицитным и минеральными элементами / **В.М. Агий, Т.М. Дурдинец, Н.П. Грига, М.П. Гуленко** // Вісник Дніпропетровського державного аграрно-економічного університету. – 2015. – № 3(37). – С. 104–106.

Установлено, что скармливание овцематкам минерально-солевых брикетов-лизунцов вволю (22–30 г/гол./сутки) способствует существенному повышению аспартатамино-трансферазы и концентрации глюкозы в сыворотке крови, увеличению среднесуточных приростов овец и молочной продуктивности соответственно на 6,1 и 5,6 % по сравнению с данными в контроле. Доказано, что использование брикетов-лизунцов летне-пастбищный период содержания оптимизирует минеральное питание животных, улучшает протекание процессов карбоксилирования и положительно влияет на хозяйственные показатели.

Ключевые слова: овцематки, брикеты-лизунцы, минеральное питание, метаболические процессы, хозяйственные показатели.

Седило Г.М. Современное состояние и основные направления развития овцеводства в Карпатском регионе / **Г.М. Седило, С.О. Вовк, М.А. Петришин** // Вісник Дніпропетровського державного аграрно-економічного університету. – 2015. – № 3(37). – С. 107–111.

Проанализированы изменения, происшедшие с 1991 года в области овцеводства Карпатского региона. Отмечено, как и в целом по Украине, значительное сокращение поголовья овец – в 3,6 раза. Однако, в силу специфических особенностей некоторых областей региона и природно-климатических зон, оно происходило менее интенсивно. Ныне здесь сосредоточено 21,4 % от общей численности овец в стране. Обсуждаются основные проблемные вопросы отрасли и намечены возможные пути их решения.

Ключевые слова: Карпатский регион, овцеводство, кооперативы, овечье молоко мясная продуктивность, скрещивание, технология

Пероцкая Л.В. Эпидемические особенности современного проявления зоонозной рожи в условиях Северо-Западного Причерноморья / **Л.В. Пероцкая** // Вісник Дніпропетровського державного аграрно-економічного університету. – 2015. – № 3(37). – С. 112–119.

Проведенные исследования относительно эпидемического проявления рожи (1961–2014 гг.), как инфекционной нозоформа, показали ее способность к динамическому изменению сапрозоонозного и зоонозного типов распространения. В результате анализа показателей эпидемической интенсивности зоонозной рожи на территории региона выделены 3 зоны с различной эпидемической активностью. Установлена разница в уровнях эпидемиче-

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ского проявления рожи среди сельского и городского населения от 12,7 до 14,4 %. К основным группам риска при заражении рожей принадлежат лица возрастом 35–45 и 60–75 лет и старше, относительно профессиональных групп – повышенный риск инфицирования существует для работников перерабатывающих предприятий, животноводства и заведений общественного питания. В исследованиях эпидемической сезонности проявления рожи установлены четкие выраженные пики подъема – весной и осенью. Рожа имеет признаки факторной природно-очаговой инфекции. **Ключевые слова:** Северо-Западное Причерноморье, сапрозооноз, эпидемическое проявление, структура заболеваемости, сезонность, зоонозная рожа, факторная инфекция.

Ткаченко А.А. Ультрамелкие формы *M. bovis*-диссоциантов 117 и 118 вариантов / **А.А. Ткаченко, Н.В. Алексеева, В.В. Захарский** // Вісник Дніпропетровського державного аграрно-економічного університету. – 2015. – № 3(37). – С. 120–124.

Показано, что в популяции микобактерий бычьего вида диссоциированных вариантов в процессе пересева увеличивается частота выделения фильтрующихся форм, которые при посеве на питательную среду генерируют палочкообразные микобактерии и редко – элементарные тельца, которые являются неотъемлемой составляющей биологического цикла развития микобактерий, потому что именно из элементарных телец (фильтрующихся форм) образуются палочкообразные формы этого вида микроорганизмов.

Ключевые слова: *M. bovis*-диссоцианты, биологический цикл, ультрамелкие формы, элементарные тельца, изменчивость микобактерий.

Бибен И.А. Морфологические, биохимические и биологические свойства пробиотических культур *Bac. subtilis* штаммы № 9 и № 12 / **И.А. Бибен** // Вісник Дніпропетровського державного аграрно-економічного університету. – 2015. – № 3(37). – С. 125–129.

Изучены базисные характеристики пробиотических культур *Bac. subtilis* штаммы № 9 и № 12, изолированных из фекальных масс от здоровых, упитанных поросят 2-месячного возраста. Штаммы были отобраны на основании их непатогенности, поскольку они не проявляли гемолитической и лецитиназной активности. Бациллы обладали типичными для вида морфо-тинкториальными, культуральными и биохимическими свойствами, на основании чего, согласно данным краткого определителя бактерий Берджи были идентифицированы как *Bacillus subtilis*. Штаммы проявили выраженную антагонистическую

активность в отношении широкого круга патогенных и условно-патогенных микробов, что является важнейшим критерием для их использования как пробиотических культур, то есть транзиторной индигенной микрофлоры. **Ключевые слова:** *Bac. subtilis*, пробиотические культуры, антагонистическая активность, транзиторная микрофлора, биологические свойства, устойчивость к антибиотикам.

Скляр П.Н. Разработка методики маммологической диспансеризации овец и коз / **П.М. Скляр** // Вісник Дніпропетровського державного аграрно-економічного університету. – 2015. – № 3(37). – С. 130–132.

Представлена методика проведения маммологической диспансеризации овец и коз с использованием ультрасонографии, термографии, а также определения качества молока с помощью мильк-сканеров и компьютерно-дифференциальной диагностики. Методика может использоваться для прижизненного определения эндоструктуры молочной железы в программе диспансеризации овец и коз, обеспечивая получение более объективных результатов исследований.

Ключевые слова: овцы, козы, маммологическая диспансеризация, ультрасонография, термография, мильк-сканеры, компьютерно-дифференциальная диагностика.

Патоморфологические особенности оценки эффективности вакцинации против микоплазмоза свиней / **Э.В. Есина, В.В. Сентюрин, В.В. Барсукова, Д.В. Чабаненко, Т.С. Пазушан** // Вісник Дніпропетровського державного аграрно-економічного університету. – 2015. – № 3(37). – С. 133–137.

Выполнена комплексная оценка а заболеваний респираторного тракта свиней и исследованы особенности патологоанатомической картины микоплазмоза свиней в хозяйстве. Проведен производственный опыт с использованием вакцины “Хиоген”, предложенной французской фирмой “Сева Санте Анималь”, против микоплазмоза свиней. Полученные данные подтверждают, что в провакцинированной группе животных продолжительность откормочного периода была меньше на 10 суток, сохранность поголовья выше на 3,1 %, а среднесуточные приросты живой массы повысились на 60 г. Вакцинация снизила патологическое поражение легких на 13 %, уплотнение апикальных долей – на 7 %, шрамы и рубцы отсутствовали в отличие от контрольной группы.

Ключевые слова: микоплазмоз, энзоотическая пневмония, вакцинация, свиньи, сохранность поголовья, привесы живой массы, післязайбіне патоморфологічне оцінювання.

ABSTRACTS. REFERENCES. KEYWORDS

Nodule bacteria of medicago and onobrychis the thick of technoloical (p. 6–11)

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The development of the waste dump areas is difficult due to poor physico-chemical conditions of the tailings dumps. In this kind of environment grow and develop only those species that have a high ecological plasticity of their root systems. This legume crops, especially perennial forage legumes – alfalfa and sainfoin, can fix nitrogen from the atmosphere. Conducted studies to determine the number and weight of nodules in Medicago and Onobrychis. Peculiarities of formation of nodules depending on quality indicators moldboard mass. It is established that different ecotopes and create different conditions for the formation of nodules. Most of them were found in the bulk layer of the soil mass, where in the top one metre of this ecotope on one-dimensional plant 3rd year of life, on average, there were: 107–131 nodules of Onobrychis and 71–128 nodules – in Medicago. In red-brown and gray-green clay nodules of Medicago and Onobrychis was mostly formed only in the upper 40 cm layer in the race, where he majored 78–98 % of the nodules. All other things being equal, the number of nodules in Medicago was always less than that of the Onobrychis. With depth the nodules are small and Onobrychis, and at the 150–200 cm depth, they are practically absent.

It is established that in nodules, living in the thick moldboard mass, contains 15–37 kg/ha of nitrogen, 4–7 kg of phosphorus, 6–8 kg of potassium and 15–35 kg/ha of calcium. It is estimated that the roots, such as Medicago, together with lubenko Vym bacteria and free-living nitrogen fixing bacteria can accumulate annually in the layer 0–20 cm on average about 350 kg of nitrogen per 1 ha.

Keywords: dump mass, recultivation, ecotope, nodules of bacteria.

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Ecologic exam of productivity of modern winter wheat varieties under North Ukrainian Steppe subzone conditions (p. 12–16)

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The analysis of yield and its structure by 30 varieties of winter wheat has been carried out under conditions of North Ukrainian Steppe subzone. Perspective more high-yield lines in comparison by checking variety have been detected. The most successful by all the indicators of yield and yield structure (grain weight per spike, thousand grain weight) was a new variety of winter wheat of DSAEU breeding Komerciyana, which having high yield, thousand grain weight, grain weight per spike, high stability and the displacement of these signs, resistant to lodging and diseases. Performances of yield formation by depending on genotype, climatic conditions and influence of singular quantitative traits have been investigated. The analysis of yield and its structure by 30 varieties of winter wheat has been carried out under conditions of North Ukrainian Steppe subzone. In 2011–2013 p. investigations were carried out on the field of DSAEU educational and scientific center in department of breeding and seedfarming crop rotation. The size of researches was 28 varieties and 2 check varieties in 2011–2013. The analysis of yield and its structure elements was developed by program modules Statistica 8.0 module of cluster analysis (by Euclidian distance). Probability of average differences were determined by t-test. As a check by yield and its structure elements were used varieties Ednist and Podolyanka, which are check varieties for the zone Steppe of Ukraine according to the State variety exam service recommendations. The working-methods in the breeding trials and primary seedfarming are satisfied to state variety exam requests. Unit plot size is 25 m² with four replication. By the results of exam, varieties Zolotokolosa, Spivanka, Komerciyana have static significance exceeds the check variety Podolyanka. Also good displacement level of this trait showed variety Zamozhnist. These varieties

ABSTRACTS. REFERENCES. KEYWORDS

are most suitable to the conditions of the region. Varieties first classification group of productivity (break up into categories by using cluster analysis) are characterized not only high yields, but the highest level of stability in the displacement of this trait and are able to realize itself in a very wide range of weather conditions the Northern Barrens. This variety Podolyanka, Zolotokolosa, Spivanka, Komerciyina, Korisna, Snigurka, Nataalka, Missiya Odessa, Trypilska.

The most successful by all the indicators of yield and yield structure (grain weight per spike, thousand grain weight) was a new variety of winter wheat of DSAEU breeding Komerciyina, which having high yield, thousand grain weight, grain weight per spike, high stability and the displacement of these signs, resistant to lodging and diseases.

Keywords: winter wheat, variety, yield, yield structure, cluster analyze.

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Depression caused by some chemical mutagens action on winter wheat sample (p. 17–24)

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Mutagen depression on grown and development of winter wheat plants in first generation by DAB and DMS treated has been investigated. The most informative parameters for mutagenic depression in M1 generation of plants of winter wheat grown and development were survival of plants, pollen fertility, indicators such yield structure parameters as plant height, grain weight per spike, thousand grains weight. Specificity and degree of mutagenic depression exhibition depending on the mutagen dose and genotype were determined. For investigation grown and development of first generation plants after mutagen treatment we used following varieties Favoritka, Lasunya, Hurtovina (created through the action of gamma rays), line 418, Colos Myronivschyny (by hybridization), Sonechko (NDMU 0,005 %) and Kalynova (DAB 0,1 %) (by action chemical mutagens), Voloshkova (termomutagenesis). Next concentration of mutagens have been used DMS (dymetylsulfat) 0,0125, 0,025 % and and DAB (1,4-diazotsetilbutan) 0,1 and 0,2 %. Experiments were conducted during the 2011–2014 under conditions of ESC of DDAEU and MIW NAAS of Ukraine. Mathematical calculated of the results was analyzed by the method of analysis of variance, reliability of differences between the average of experimental and control variants were evaluated by factor analysis. The reliability of the differences between the average obtained in experimental and control variants were evaluated by Student's test. When exposed to the similarity parameters, survival, fertility showed no specifics – mutagen effect did not differ depending on the method of obtaining variety. The most informative parameters for mutagenic depression in M1 generation of plants of winter wheat grown and development were survival of plants, pollen fertility, indicators such yield structure parameters as plant height, grain weight per spike, thousand grains weight. These high-performance had links with concentration mutagen, but using DAB depression may not even appear on these parameters. When detected degree of mutagenic depression by parameters of yield structure analysis it revealed that the action of DAB on variety Kalynova (created through this mutagen) didn't cause depression at a 0,1 % concentration and by the parameter "plant height" at a 0,2 % concentration to. Factor analysis has been showed that especially the formation of yield structure parameters depending by factor genotype, then the concentration of mutagen, then nature of mutagen.

ABSTRACTS. REFERENCES. KEYWORDS

Keywords: winter wheat, chemical mutagens, mutagen depression, germination, survival, yields structure.

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The productivity of plants of barley winter-annual is depending on mineral fertilizers (p. 25–28)

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One of the leading agricultural cultures of Ukraine there is a winter barley. He has high potential of the productivity, besides a barley ripens winter-annual before winter wheat and barley furious accordingly on 8 and 12 days. It enables to free the field, properly to prepare soil and use an area under the repeated sowing. It is known that barley the winter-annual well reacts on bringing of mineral fertilizers. However next to advantages has the substantial failing – low resistance to cold. There were the directed niches exactly on the decision of this problem. Influence of doses and correlation of mineral fertilizers is investigational on growth, development and productivity of winter barley of-annual. It is found out how mineral fertilizers influence on resistance to cold of culture. Certainly optimum combinations of fertilizers which provide maximal firmness of plants to the not favourable terms of winter period. It is set, as mineral fertilizers influence on growth and development of plants during a vegetation. The most high resistance to cold of plants of winter barley-annual is got due to bringing of mineral fertilizers under the preseed cultivating in the doses of $P_{30}K_{30}$ and $N_{30}P_{90}K_{60}$. The maximal productivity of plant of winter barley-annual is formed at bringing of mineral fertilizers in the dose of $N_{60}P_{90}K_{30}$. Also the considerable productivity is got at the doses of $N_{30}P_{60}K_{60}$ and $N_{30}P_{60}K_{30}$ under basic till of soil.

Keywords: winter barley, resistance to cold, productivity, fertilizers, application rate, nitrogen, phosphorus, potassium.

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Influence of the basic soil tillage means on the formation of corn grain productivity (p. 29–31)

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The features of grain productivity formation of early-ripening corn hybrid Dneprovskiyi 181 SV are determined depending on the methods of the basic soil tillage in three-year researches, conducted in the conditions of Zaporozhye region. The quantities of weeds, their weight were as the least in a variant of soil loosening with deep-ripper on the depth 25–27 cm. These indicators were as the most by discing on the cm depth 12–14. The replacement of ploughing with depth 25–27 cm (control or nontreated variant) on the loosening with the same depth provided with the increase of available moisture stocks in a layer of soil 0–100 cm at corn sowing – on 16 mm and in a phase of maize tasseling – on 8 mm. By discing of soil with depth 12–14 cm and no-tillage the available moisture stocks was decreased for 6–8 mm. The grain productivity was on 0,25 tonn/hectare more on the background of deep loosening of soil (depth 25–27 cm) in comparison with the control (ploughing with depth 25–27 cm). On this variant there were obtained the best economic effectiveness indicators – the conditional net income and the level of profitability. At replacement of ploughing by discing on depth 16–18 cm and 12–14 cm the grain productivity was decreased in comparison with the control (ploughing with depth 25–27 cm) accordingly for 0,43 and 0,66 tonn/hectare, and by no-tillage – on 0,89 tonn/hectare. In comparison with ploughing the conditional net income by

discing on depth 16–18 cm decreased for 598 UAH/hectare, by discing on depth 12–14 cm and by no-tillage – accordingly on 931 and 1236 UAH/hectare.

Keywords: corn, soil tillage, weeds, soil moisture, grain productivity, economic efficiency.

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The hogweed corn crops control using the sub-soil and postemergent herbicides (p. 32–36)

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Represented are the results of studying comparative effectiveness of ground and emergency herbicides as well as their combinations on the number and bulk of ground pests in corn seeds. Established are the benefits of applying emergency herbicides and combinations of ground and emergency herbicides before using ground products only via determining the percentage of dead ground pests, reducing their air-dry bulk and increasing crop yield. The purpose of the research was to compare the effectiveness of ground and emergency herbicides as well as their combinations via registering seed infest with ground pests and crop yield of corn and to recommend the best products for yielding on this basis. The research was conducted within 2012–2013 years at Erast Experimental Station of the State Establishment, the Institute of Agriculture of Steppe Zone of the National Academy of Agrarian Sciences of Ukraine. Adengo 465 SC emergency herbicides appeared to be the most efficient in battling with ground pests within 2012–2013 years if applied in the phase of 1–2 leaves of corn and when applying Harnesses herbicide combination for harrowing along with Master Power OD in the phase of 5–7 leaves of corn. On the average over 2 years of research, air-dry bulk of ground pests was

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at the lowest level when applying Harnesses herbicide combination for harrowing along with Master Power OD in the phase of 5–7 leaves of corn as well as Adengo 465 SC product in the phase of 1–2 leaves of corn. The closest to II control (battling with ground pests manually) crop yield of corn over 2 years of the research was obtained from the areas of the first sowing term subject to applying Adengo 465 SC herbicide at the phase of 1–2 leaves of corn. On the basis of the conducted research, it is recommended to apply when corn yielding Adengo 465 SC herbicides in the phase of 1–2 leaves of corn at a dose of 0,45 l/ha along well harrowing Harnesses combination at a dose of 2,5 l/ha along with Master Power OD at a dose of 1,25 l/ha in the stage of 5–7 leaves of corn as the most effective means for reduction their infest with ground pests.

Keywords: corn, herbicides, ground pests, yield, period sowing.

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Greening Technology soybean cultivation in the steppe Ukraine (p. 37–40)

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Studying chemical fertilizers influence on growth, development, productivity and quality of soybean

carried out in the steppes of ordinary chernozem humus on the less. Biologization technology and individual techniques is an important measure that can deter further reduction in soil fertility, stabilize production systems, reduce dependence on technological factors. Throughout combination with fertilization of crops lowest material and labor costs account for inlay biostimulants seeds and micronutrients. Researched increase field germination processes of respiration and nutrition of soybean seeds with inlay and biological products bishofit that impact on improving yield and quality. Increase of grain was 3,5–4,0 kg/ha, the content of “raw” protein, protein, fat increased. At the greening of soybean growing technology in the steppe promising method inlay seeds biopreparation AKM and bishofit, due to significant changes in metabolism, the restructuring of a number of metabolic systems at the gene level.

Keywords: soy, biopreparations, inlay, AKM, bischofite, “raw” protein, protein.

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Special characteristics of soil formation at the boundary of the transition from Forest-steppe into Steppe (p. 41–45)

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Studying the soil agroformations of Kirovohrad region showed considerable difference between the mapped chernozem and actual situation were discovered. The typical in the steppe part of the region were marked* on the maps as ordinary, and vice versa, ordinary chernozem in the forest-steppe were defined as typical. Soil sections were made on the watershed plateaus as well as on the slopes

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of varying steepness and exposure. Particular attention was paid to the depth and shape of the carbonates. It is shown that in the conditions of developed relief of the same latitude on the southern exposure slopes soils inherent in the southern territories are formed and on the northern slopes soils are more typical of the northern territories. Clash with reality on modern maps of soil caused by different approaches to defining the boundaries between the forest-steppe and steppe. 30's of last century, the maps of soils limit was set on the southern border distribution of typical chernozem watersheds, which is 10–15 km south of Kirovograd. While the map of soil in 1949, this limit ran 20 km north of Kirovograd. Transitional chernozem that are intermediate between typical and conventional stood on the card. They contain Bilozirka at a depth of 150–160 cm. Instructions and requirements of the comprehensive soil testing methods under which they conducted continuous survey in 1957–1961, respectively, did not provide for the allocation of transitional chernozem. These documents are not allowed to allocate the typical chernozem of steppe and ordinary chernozem in forest-steppe. Dividing line between natural areas became the southern boundary of the natural forests in watersheds available at the time. A 30–40 km width belt was proposed to be formed at the boundary of the transition from Forest Steppe into Steppe within which, depending on the terrain, forest steppe landscapes as well as steppe landscapes can be formed. We consider it appropriate to resume the allocation of the chernozem transition from the typical to ordinary, where white soft spot appears at the depth of 140–160 cm.

Keywords: soils, Forest Steppe, Steppe, transition belt, typical chernozem, ordinary chernozem.

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Evaluation and modelling of yield formation of winter wheat varieties using a method of artificial neural networks (p. 46–52)

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The paper presents the results of analysis, evaluation and neuromodelling of the impact of biological protectants (trichodermin, planriz, phytosporin) on yield formation of different wheat varieties in the steppe and dry steppe zones under climate change. It shows that seed treatment with chemical protectants and bacterial preparations had a different effect on yield formation of different varieties of soft winter wheat. The application of biological protectants resulted in a yield increase of wheat varieties under study by 0,36–4,7 % compared to the control. A negative yield balance was observed under the use of the chemical protectant Raksil-ultra – 6,01 %. The application of the biological preparation Trichodermin in presowing treatment provides the highest germination potential of seeds in all soft winter wheat varieties. The method of multivariate analysis of variance revealed that the largest contribution to yield formation was made by the 'years of research (climate) factor (42,26 %); significant results were registered due to the effect of the following factors – varietal composition of soft winter wheat (8,79 %), and biological products (9,34 %), as well as the interaction of these factors (12,45 %). In the year of moderate weather conditions, the share of varietal composition in yield formation was 33,79%, and that of biological protectants amounted to 5,75 %, while in the year of favorable weather conditions the values were 10,41 % and 52,48 %, respectively. For the first time in modelling soft winter wheat yield formation, there was used a method of artificial neural networks that made it possible to determine the nonlinear regularities in the influence of investigated factors and create an adaptive multi-layer regression model for a highly accurate (90,4 %) yield prediction. The multiple correlation taking into account nonlinear patterns of the influence of factors on soft winter wheat yield was 0,87. The research results allow a further improvement and implementation of strategies for optimizing agrotechnological practices in the steppe and dry steppe zones.

Keywords: biopreparations, winter wheat, yield modelling, analysis of variance, neural networks.

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Effect of chemical improvement on the salt regime (illustrated by Dnipropetrovsk region) (p. 53–57)

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The article is devoted to the feasibility of a chemical improvement on the secondary salinization of irrigated soils. On the example of the Dnipropetrovsk region was analyzed the negative effects of long-term irrigation on the soil salt regime. It was proved that irrigation with high salinity water adversely affects on the soil absorbing complex (SAC) and the other properties of the soil is much stronger compared to the fresh water irrigation. In the article it sets the problem to seek the best application rate calculated of phosphogypsum as a chemical ameliorator, under irrigation and without it. Field studies started in the spring and autumn 2010 on the ordinary humus with little organic matter leached on the loamy loess. Humus horizon has uniform color with depth of 40–45 cm. The thickness of the topsoil is 30 cm. This article is based on conducting ground-salt pickup on the testing site. The authors reveal the basic methods for determining the chemism (type) and the level of soil salinity for identifying the actions of chemical reclamation. As a result of the chemical analysis of the water extract of soil for anionic and cationic values it was defined the type and degree of soil salinization. On the analysis results for the type of salinity of cationic and anionic ration, the level of salinity of the composition of toxic salts and the “cumulative effect” it is defined by the optimum application rate of phosphogypsum as a chemical ameliorator with irrigation and without it. It directs the special attention to improving the efficiency of chemical improvement in the conditions of irrigated agriculture.

Keywords: salty black soil, irrigation, chemical improvement, phosphogypsum, chemism and degree of soil salinity.

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The resistance of corn hybrids seeds and their post-harvest handling (p. 58–63)

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The use of high quality seeds is essential agrotechnological condition of corn growing and raising the yield of this crop. Numerous experiments scientific institutions and the experience of the best farms shows that when sowing quality seeds grain yield of maize increased by 18–20 % and more. To prepare and produce high-quality corn seed essential it is important its post-harvest processing, namely, machines and technologies for this. In Ukraine post-harvest processing is carried out in the system corn plants and seed farms that have the appropriate material and technical base and mostly typical technological scheme of processing of seeds, starting from the stage of receiving the cobs to the storage of finished products. The thermal drying process is of particular importance in post-harvest technologies. It is noticed that under the same conditions different corn hybrids respond differently to drying conditions, and therefore different shape and quality and, above all, the similarity, it may rise or fall compared to that which one gets when cleaning wet seeds. **The purpose of this research** was to reveal the peculiarities of post-harvest seed treatment of corn in a typical corn-processing plant, to establish the optimal heating temperature of grain depending on the heat resistance and germination of corn hybrids seeds in the process of drying. **The methodology and research methods.** Study of the characteristics of post-harvest processing was performed on corn-processing plant of Public institution in the Institute of agriculture steppe zone NAAS capacity of 500 tons of seeds per season, a pilot farm SE "DG Dnepr" and in the laboratory of innovative technologies of processing, storage and standardization of grain. In parallel, we performed a study of the effect of drying temperatures on the quality of corn seeds. In experiments were used the selection of corn hybrids of the Institute, various ripeness groups: In experiments were used for the hybrid maize breeding Institute, different

maturity classes: Dneprovskiy 181 SV, Kremen' 200 SV, Khmel'nitsky, Solonyansky 298 SV, Lubava 279 MV, Rozovsky 311 SV, Zbruch and zamazatelno line KT 021 S.

The plant is typical, because it has a standard set of machines and technological equipment. In the process, after each operation taking samples of seeds, which determined the quality of humidity and cleanliness, level of injury to the seed, germination energy, germination, seed yield on accepted techniques developed at the Institute. Directly in the plant conducted a production test, calculated the economic efficiency of technological processes. The experiments were performed according to the recommendations, guidelines and methods for conducting post-harvest and pre-processing and storage of seed crops. Different temperature regimes of drying was investigated in laboratory conditions. Moisture at harvest cobs selected for drying, 17,3–53,3 %. The heads are dried to a moisture content of 12–13 %, thin layer of driers in the chamber type. The temperature of the coolant in the chamber of the dryer was 30, 40, 50 °C, practically so was the heating of the grain on the cob. The quality of seeds after drying, sowing and harvest properties were determined by conventional methods according to the experiments with corn. Special condition paid field germination, as the most important indicator associated with the performance of the plant and yield hybrids. **Conclusions.** Identified post-harvest handling processes, which in terms of the typical corn-processing plant lead to a significant deterioration of seed quality, including threshing ears and separation of seeds. Causes of deterioration are the macro- and micro-damaging of seeds and impurities self-hulled grain from wet ears. The equipment involved in the transaction should be a priority upgrade and replace the new one. Optimal temperature regimes of drying of seeds of maize hybrids depending on their thermal stability. The resistance was formed under the influence of harvest moisture content and the heating temperature of the seed. The heating temperature at 30 °C provided high laboratory and field germination of seeds before harvest moisture 36–40 % depending on hybrids for low – temperature can increase to 40 °C. It was detected, the heat resistance of seeds depending on the varietal characteristics of hybrids, among the least studied was heat-resistant hybrid Kremen' 200 SV, for which it is necessary to develop and set individual drying temperature.

Keywords: seeds, hybrid maize, post-harvest processing, drying, germination, quality.

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Recreation in Ukraine – state of study and prospects of research (p. 64–69)

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It was analyzed the conceptual-categorical apparatus of recreation in Ukraine by the legal, reference and scientific-methodical literature sources in this paper. It was noted that there is need to clarify many concepts at the national legislative level, the basis for this may be the scientific ground of scientists. Relevant study and development of state programs in the sphere of recreation and tourism as one of the priority sectors of economic activity in the current development of Ukraine is call of the day. The features of structural organization of recreational areas in Ukraine, the state and prospects of development of recreational activities in the territories agrosphere were established. The structural and organizational scheme of conceptual and categorical apparatus of recreation in Ukraine was developed. For more effective public administration of recreation and tourism development at the national level a unified option the macro tourist zoning of Ukraine should be adopted, indicating centers, which will increase the level of recreational areas development, and agro-tourism in particular. Also, taking into account the structural, organizational and balanced management approaches, these measures will allow to reach the higher levels of recreation development in some regions with high recreational

potential, but, unfortunately, relatively low development of infrastructure in a sense of recreational services providing. Development of recreation in agrosphere has considerable prospects for research, because Ukraine has a significant resources for agro-tourism, rural green and eco-tourism development. Meanwhile, issues of environmental ground of recreational areas monitoring in agrosphere, their zoning at the national and regional levels.

Keywords: recreation, recreational sector recreational resources, recreational activities, recreational areas, recreational objects.

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Analysis of Technological Aspects of Grain Food Production with a High Biological Value (p. 70–75)

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Cereals are the main kinds of raw material for food production either for Ukraine or for the world. Ukraine is one of large exporters of grain at the world market. According to results 2014 the amount of the exported grain reached more 31 mln.tonn Grain is processed to different kinds of groats and flour, fermented drinks. Besides flour is a main component for bakery, pasta and confectionery production. The basic flour production is made from wheat and rye in Ukraine. Grain is the source of carbohydrates, proteins, vitamins, microelements and, in particular, food fibres these components is vitally needed for health nutrition. Following the tendencies of production of refined food appeared at the beginning of the last century processing grain into extra shelled cereal food production without peripheral layers is traditional in Ukraine. Thus the biological value of the produced flour and other cereal foods is decreased substantially, and the losses of grain raw materials constitute over 20 %. Implementation of whole grain food production technologies give possibility to process grain with all components, preservation of all valuable components of grain in finished food production for consumer. Despite a lot of advantages they are faced with technological difficulties of applying in industry. Hydrothermal treatment occupies one of key place in grain processing. Stage of hydrothermal treatment of grain used by traditional technologies of grain processing into flour and groats allows giving grain optimal technological properties, changing the structural and mechanical properties of certain anatomic parts of grain and, as a result, reducing the losses of raw material with increasing finished product output. For

innovative technologies of grain processing, besides the production of whole grain foods, the aim of this technological stage is complemented by a task to activate the processes of embryo germination. On the one hand considerable increase bioavailability of the finished food products is the consequence of this approach. On the other hand, being in the conditions of high content of free moisture, grain raw material becomes more microbiological contaminated. In addition the consumer qualities of the food products decrease because of activation of enzyme processes. Using water without any treatment is usual for grain hydrothermal treatment. Actual aspect is using of grain of water with certain regulated properties. Using physical and chemical methods for water treatment is perspective, for example, by usage of non-equilibrium plasma. Having high penetrating ability and antiseptic properties, plasma-chemically activated water in hydrothermal treatment of grain would allow solving the key problems of whole grain food production.

Keywords: grain, biological value, hydrothermal treatment of grain, mycotoxins.

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Root crops digging with improved vibrating digger (76–78)

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It is given a mathematical model for vibrating digging out process of root crops. It is assumed that the forward movement of the working body, cutting a layer of soil with root crops, is accompanied by its harmonic vibrations in the direction perpendicular to the plane of its surface. It is envisaged that during one period of oscillation working body runs a figurative distance equal to its vibration amplitude, divided by the sine of the undercut angle. Article contains differential equations of root motion, pushed out of the soil, so it can be identified root forward movement during the cutting of soil layer. It is noted that the accelerated removal of root crops from the soil makes possible the reduction of the blade length, which is an additional factor in reducing resistance when digging.

Keywords: root crop, soil, digging out, working body, wedge bar, resistance, vibration.

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Biochemical indicators blood heifers Ukrainian red dairy breed in according to the length of their prenatal development (p. 79–82)

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The results of studies of biochemical parameters of blood heifers Ukrainian red dairy breed depending on the length of their fetal development. It is set that middle duration of uterine development of experimental heifers laid down 283,8 day. (49,4 %) developed in the womb of mothers within the limits of 280–285 days, other individuals marked considerable enough deviations from these classes. A difference between extreme equaled 19 days among them, and for separate animals she folded 26 days. The biochemical indexes of blood of experimental heifers meet a physiology standard that testifies to the kind. However, there are differences after most indexes. Yes, heifers with the middle period of uterine development after most indexes of blood prevail the persons of the same age with short and prolonged uterine development. It testifies to more intensive motion of metabolic processes in their organism that in turn substantially influences on the level of the suckling productivity. They for certain (after middle for two lactations) prevailed individuals with the prolonged duration after a yield on $244 \pm 89,4$ kg, amount of suckling fat on $8,8 \pm 3,08$ kg, and with short duration accordingly on $210 \pm 84,0$ kg and $8,3 \pm 2,97$ kg. Reliable negative correlative connection is set between a yield and content of fat in milk of cows with different duration of uterine development in limits from $0,124 \pm 0,1538$ for cows with the short period of uterine development to $0,739 \pm 0,0746$ with prolonged. Obtained data testify to more intensive metabolism in their organism and can be used for an early estimation them productive qualities.

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Keywords: blood, productivity, exchange of matters, enzymes, uterine development, korelyaciya.

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Productive qualities of Karakul ewes off spring askania of different reproductive age (p. 83–87)

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A comprehensive study of the effectiveness of increasing the duration of the productive use of ewes Askania Karakul breed and productive qualities of their offspring has been carried out.

This thesis presents the results of research and experimental scientific grounds for early (9 months) use of young ewes for the reproduction of productive longevity of Askanyia karakul breed ewes and the impact of their own age on productivity and formation of exterior and productive qualities of their offspring. It was found that ewes to 10 – years old have high fertility rates with larger indices in the early and middle aged ewes. Output of lambs per 100 ewes made 130 and 150 heads. Ewes of early and older age are able to have offspring with high productive qualities, strong constitution and exterior typical for young Askanyia karakul breed. The 18 months age young ewes from the ewes of conventional 2 years age had the reliable exceeding over the young ewes of the same age only by such measurements; the height in sacrum by 5,9 % ($P>0,999$) the width in the ischia tuberoses – by 8,3 % ($P=0,999$), metacarpus by 11,3 % ($P>0,999$), but was inferior to them in the width of lengthened tuber by 9,5 % ($P>0,999$). Among rams the significant differences was not found. By meat quality the offspring of middle (3–5) and conventional 2 – year-old ewes differed by the unreliably better indices. Their slaughtering yield was 48,88 and 48,99 %. Researchers showed that the offspring of early (1,2) and older (6–10) – age ewes is more suitable for pelts; conventional and medium (2–5) – years age ewes for growth to repair the herd and the rest young for meat production.

Keywords: reproductive age, fertility, ewes, the offspring, live weight, average daily gain, curls.

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Body conformation and composition formation in cows of Ukrainian red dairy breed (p. 88–90)

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The research results of features of body conformation and composition in cows of central zonal breed type of Ukrainian red dairy breed have been provided. The aim of the research was to define the possibility of chine development in animals by means of selection in the process of breeding this breed type. In agricultural private enterprise “Chumaky” among 70 experimental cows, analogs in age, we have defined the basic conformation measurements and additional indicators: cross-section area of the chest behind the shoulder blades and at the level of the last rib, the conditional volume of the chine and volume-weight number according to the formula: $VWN = (V:BV):1000$, where VWN – is a volume-weight number, l/kg; V – is a volume of the chine cm^3 ; BW – body weight, kg; 1000 – the coefficient for transformation cm^3 in liters. Cows have been divided into three types of a body composition for the deviation from the VWN mean value, which was 0,47 l/kg ($n=70$). As for low-volume type, with the value of VWN less than 0,44 l/kg were distributed in 20 cows, to mean-volume type, with the VWN in the range from 0,44 to 0,50 l/kg, respectively are 32 animals, and a large-volume type with VWN of 0,51 l/kg or more – 18 cows. Compared with the low-volume type of body composition, cows' chine of the first two types were much better formed in length respectively: 4,03 cm when $P>0,999$ and 2,31 cm when

ABSTRACTS. REFERENCES. KEYWORDS

$P > 0,95$, on the cross-sectional area of the chest behind the shoulder blades respectively: 223,82 cm² at $P > 0,99$ and 60,78 cm² $P < 0,95$; at the level of the last rib, respectively: 616,76 cm² at $P > 0,999$ and 342,42 cm² at $P > 0,999$, the volume of the chine respectively: 52,09 l when $P > 0,999$ and 25,3 l when $P > 0,999$; with the advantage on volumetric weight coefficient respectively: 0,13 l $P > 0,999$ and 0,06 l when $P > 0,999$. They had a lower eirysomia-leptosomia index respectively 2,83 and 1,06 %, and the shin load index 0,95 and 0,15 %, $P < 0,95$, a higher value of the deep chest index respectively by 2,0 % ($P > 0,95$ and 0,6 %, $P < 0,95$ and conditional volume of the body length, respectively 46158,2 cm³ at $P > 0,99$ and 1147,5 at $P < 0,95$. They are characterized by a more expressed body density. When selecting, it is advisable to give preference the animals with large- and mean-volume type of body composition.

Keywords: chine development, volume-weight number, conformation measurements, indices of body built.

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Productive qualities evaluation of transcarpathian intrabreedprekos sheep type (p. 91–94)

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There are given the results of investigations on the assessment of the productive qualities sheep breeds of transcarpathian intrabreed prekos type. Established that fertility ewes responsible 108,2 %, and at weaning received an average 82,2 head of lambs per 100 ewes. In addition investigated the milk yield of ewes, which revealed a significant difference for dairy ewes between groups and growth of lambs during the first 20 days of lactation. The average daily milking in ewes with twins was higher than with the single 33,54 % and amounted to 1750 g of milk against 1163 g. Milk yield during the first 20 days of lac-

tation was 35,0 kg of milk in the group with the twins and 23,26 kg of milk in the group of singles. Found that the high ewes lactation had a positive impact on growth, development and productive qualities of young, as well as contribute to the realization of the genetic potential of early maturing of young animals. In terms of growth and development of young animals obtained from ewes that gave birth to the twins was inferior to the counterparts single only a few linear measurements that characterize meat quality. The advantage of singles was accordingly the depth of the chest by 1,7 cm, chest width is 1,3 cm, chest girth – 1,2 cm. An general it is found that lambs born twins same precocious as their peers who were born singles, as indicated by the average daily gains of young animals during the suckling period were highest was in group with dine wise peers 177,0 g to 184,6 g with singles. High ewes lactation provided a feeding of lambs born as singles and twins that at weaning had an average live weight of between 24,8 to 26,1 kg.

Keywords: Transcarpathian intrabreedtype, evaluation, performance, live weight, milk, average daily gain.

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Problems of the development of sheep breeding and ways of its resolving (p. 95–103)

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In the article the major trends of sheep breeding were determined through the prism of the sta-

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tistic analysis data on sheep livestock number, production of major products – wool and mutton, market sales. The theoretical principles of economic efficiency of agricultural sheep breeding enterprises in market conditions reviewed. There were shown the economic features of the sheep industry. There was done the statistic analysis fulfilled on sheep reproduction, wool and mutton manufacture profitability in Ukraine during 1990–2013 years. The comprehensive appraisal of the current situation of sheep breeding and its economic efficiency by climatic zones of Ukraine according to regional and historical features was conducted. In the article was determined the main problem of entering of the Ukrainian mutton to the world market – the absence of quality certification according to the international standards. The resolving of this problem would confirm compliance of mutton to international standards, improve competitiveness, allow the manufacturers to participate in tenders on equal conditions with foreign competitors, to promote actively their products, to expand markets, to simplify exports procedure, to feel more confident on international scene. There were determined the measures of rearing, stabilization and development of sheep breeding in Ukraine through a number of activities at the macro and micro level.

Keywords: development, sheep breeding, economic efficiency, natural-climatic zones, diversification.

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Norms of feeding of ewes by deficit mineral elements (p. 104–106)

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Given the scarce minerals in the diets of sheep of Ukrainian Carpathian mountain breed it is developed recipes and production technology of bricks for licking using natural minerals of Transcarpathia limiting macro- and microelements, buffer and chelating components. The undeniable fact of deficiency of mineral elements in diets of ewes is their consumption during the first 6 days of bricks licking (ad libitum) 30–41 g/head a day and for the rest of the experimental period within 22–30 g/head a day, which promotes to continuous and dosed admission of mineral elements in the body of the animal. At is established that feeding of ewes by mineral-salt bricks-for licking (22–30 g/head a day) contributes significantly to improvement of glucose and aspartate amino-transferase in serum of blood, increase of average daily increments of sheep and milk production by 6,1 and 5,6 % respectively compared with the data in the control. It is proved that the use of bricks for licking comprising natural minerals of Transcarpathia and components containing carboxyl group (sodium bicarbonate, bentonite and biotin) affect on all metabolic processes and especially on the lipid metabolism. Using of a food additive in the summer-pasture holding period of keeping optimizes mineral nutrition of animals for a broad spectrum of nutrients deficient minerals, improves processes of carboxylation and positively a effects on feed conversion ratio and economic indicators.

Keywords: ewes, bricks for licking, mineral nutrition, metabolic processes, economic indexes.

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Current situation and main directions of development of sheep breeding in the Carpathian region (p. 107–111)

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We analyzed changes that have occurred in the period since 1991 in the field of sheep breeding in the Carpathian region (Zakarpattia, Ivano-Frankivsk, Lviv and Chernivtsi oblast), marked by specific features of certain regions and climatic zones, together with the main problems of the industry and highlighted ways to solve them. During the period from 1991 to 2015 held a significant reduction in the sheep livestock as a whole in Ukraine (more than 9 times) and the Carpathian region in particular (3,6 times). Starting from 2011, there is a positive trend towards increasing livestock. Folding the sheep breeding industry in the Carpathian region passed less intensively than in Ukraine in general. In 1991 those regions had concentration of 6,2 % of the total livestock, then in 2015–21,4 %, including the proportion of Transcarpathian region that currently is 14,6 %. In regions that practice the milking of sheep (Bukovina, Zakarpattia, Ivano-Frankivsk mountainous areas), reducing livestock was less substantial. Density of the livestock per 100 ha of agricultural lands in the Carpathian region was more than three times the average prevails in Ukraine (6 sheep versus 1,9 sheep). In the Transcarpathian and Chernivtsi oblasts this indicator is in accordance with 25,3 and 7,6 sheep/100 ha. On average, around Ukraine to 1 thousand population is accounted for 17,3 of sheep, and in the Carpathian region, this figure is much higher and is 27,7 sheep. However, this advantage is formed entirely by the Transcarpathian and Chernivtsi regions, whereas in the Lviv and Ivano-Frankivsk, the number of sheep per thousand inhabitants is much lower. For comparison, in Europe and the Caucasus per thousand residents accounted for 210 sheep. The bulk of the livestock (almost ¾) concentrated in the farms of the population. In average in Carpathian region this figure amounts to 87,1 %. Ways of development of sheep breeding in the region:

- association of small producers and development service cooperatives;
- increase of the professional level of employees in industry, including owners of private farming and farms;
- setting up scientific research institutions on farms and educational institutions agricultural profile of breedings farms;
- increasing dairy and beef breeding sheep performance using pure-breed methods and the crossbreed of mating;
- improvement of production technology and processing sheep's milk;
- creating a network of specialised slaughterhouses, able to conduct the slaughter of sheep, rating, and sections cut of meat according to the requirements of international standards.

Keywords: Carpathian region, sheep breeding, cooperative, sheep milk, meat productivity, crossbreeding, technology.

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Epidemic characteristics of erysipelas manifestation in conditions of Northwestern Black sea region (p. 112–119)

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Carried out investigations concerning epidemic manifestation of erysipelas showed that the given infectious nosoform is able to dynamic changes of saprozoonotic and zoonotic types of spreading. In the result of analysis of epidemic intensity indices of zoonotic erysipelas on the regional territory 3 zones with different epidemic activity have been isolated. The difference in the levels of epidemic erysipelas manifestation among rural and urban population is at the level from 12,7 % to 14,4 %. Persons at the age of 35–45 and 60–75 and older belong to the main risk groups under contamination, as to professional groups there is the increased risk of being infected among workers of animal husbandry processing enterprises and establishment of public nutrition. In the result of seasonal epidemic manifestation of erysipelas obviously distinct peaks have been established – spring and autumn. Erysipelas has factor features of naturally located infection. The researches to specify basic laws of epidemic manifestation of erysipelas in the territory of Northwestern Black Sea region during 1961–2014 allow us to characterize it as an infection nosoform, which is able to dynamically change of saprozoonotic and zoonotic

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type of spreading. A significant similarity of epidemic characteristics of manifestation of zoonotic form of erysipelas among urban and rural population on different landscapes areas of the territory and in different socio-economic conditions indicate the presence of active and universal sources of pathogen, directly or indirectly related to rodents and livestock products. Stable conservation among sick representatives of age group of 35–45 years old and absolute predominance among them of cutaneous and joint lesions localized in fingers, indicates the main value of contact and traumatic infecting. At the same time also saved a key role of leading factor of pathogen transmission – pork meat and by-products contaminated with *Erysipelothrix rhusiopathiae*. In a number of cases erysipelas has signs of factorial nature-located infection with typically zoonotic spread, which usually takes place in the most humid years with a high density of field rodents.

Keywords: north-western Prychernomorje, sapronotic and epidemic manifestation, the structure of the disease, seasonal periods, zoonotic, erysipelas, factor infection.

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Ultrasmall forms *M. bovis-dissociative 117 and 118 options* (p. 120–124)

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We show that the population of bovine mycobacteria species dissociative options in the replanting increasing frequency allocation ultrasmall forms that by seeding in culture medium is generating rod mycobacteria and, rarely, elementary cells. It is alleged that the past is an integral part of the biological cycle of mycobacteria, because it's from elementary bodies (ultrasmall forms) formed rod-shaped form of this type of microorganisms. The subcultures of species dissociative of *M. bo-*

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vis contain the filterable forms, their frequency of excretion increases depending on the number of generations (passages). The ultrasmall not acid resistant forms, by the sowing in elective medium for cultivation mycobacteria, multiply to form colonies both a single and a continuous growth (as a result of the merger of separate colonies) culture in several times slower than in control test. In cultures, which obtained from the filtrate, under the immersion are found the different, from those cultures in nutrient medium, morphological forms. The presence of the ultrasmall forms in the populations of mycobacteria, and their ability to generate the morphologically modified microorganisms in the subcultures, is convincingly argues their indisputable importance in the biological development cycle of the examined species *Mycobacterium tuberculosis*.

Keywords: *M. bovis* dissociative, biological cycle, ultrasmall forms, elementary cells, variability mycobacterium.

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Morphological, biochemical and biological properties of probiotic cultures *Bac. subtilis* strains BI-9 and BI-12 (p. 125–129)

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Probiotics – biologics is made of live antagonistically active bacteria, or representatives of the normal resident microflora – lactobacilli, bifidobacteria, *E. coli*, aerococcus, saprophyte spore-bearing bacteria. From the combination of physiological and biochemical properties and biological activity factors, promising to create a probiotic microflora have bacillus species *Bac. subtilis*, *Bac. cereus*, *Bac. megaterium*. These types of saprophytic bacilli are expressed antrakoids-antagonistic properties against different microbial biocenosis stably extracted from different habitats including the organism tissue of warm-blooded animals, and insects and plants. Joined environmental objects pig feces and healthy piglets were isolated 12 crops saprophytic bacilli-antrakoids identified as *Bacillus subtilis*, of which two probiotic cultures possessed potencies and depositing as strains BI-9 and BI-12 transitory resident indigenous microflora. Culture *Bac. subtilis* strain BI-9 and BI-12 have typical form basic character-

istics exhibit pronounced antimicrobial antagonism representatives microbial biocenosis gastrointestinal tract were biochemically active show little resistance to the antibiotics had no pathogenicity factors and cause infectious diseases in bioassay on white mice. The prospect of further research is the use of crops *Bac. subtilis* strains BI-9 and BI-12 as a basis for the creation of probiotic preparations, due to significant antagonistic activity against pathogenic and conditionally pathogenic microorganisms.

Keywords: *Bac. subtilis*, probiotic cultures, antagonistic activity, transient microflora, biological properties, resistance to antibiotics.

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Development of methods mamological clinical examination of sheep and goats (p. 130–132)

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The methods of breast clinical examination of sheep and goats with the use of ultrasonography, thermography, determine the quality of milk with milk scanners and computer-differential diagnosis, which allows to objectify the results of the research can be used to determine the vital endostructure of breast in program clinical examination of sheep and goats. Ultrasonography reveals the pathological processes in the mammary gland, characterized by changing the ratio of tissue density, growth of connective tissue elements, violations hemodynamics. At sonogram taken into account the density of the structures due to changes anatomical and topographical boundaries, visualization echopositive or echonegative images, size, shape and intensity of hyperechogenic. In animals with saline breast morphofunctional state ultrasonogram characterized by hypoechogenic, and in pathological processes dominated hyperechogenicity. The technique developed thermographic diagnosis of pathological processes in the breast includes thermoscope (determination of the temperature gradient) and thermography (qualitative and quantitative assessment of the color palette). Take into account the intensity of the thermal (infrared) radiation, which depends on the blood supply of the tissues and metabolic processes. Pathological processes in the mammary gland of inflammatory or degenerative change parameters of the thermograms qualitatively (distribution of “hot” or “cold” color-portions branching destruction zone – localization of the contours, intensity) or quantitatively (the temperature gradient between the tissues surrounding the test site with, mammary gland and the environment). In animals with chronic serous edema, experimental proliferation, induration of breast thermograms dominated by “cold” colors, and animals with catarrhal and fibrinous mastitis, on the contrary – “hot”. The temperature gradient will be quite significant. Milk scanners can diagnose sub-clinical mastitis by detecting changes in the milk (increased somatic cell count, pH and conductivity change of milk). The computer program allows you to differentiate pathological processes such as acute and chronic serous edema, serous, catarrhal, purulent, fibrinous,

hemorrhagic, subclinical mastitis, udder induration.

Keywords: sheep, goats, mammological clinical examination, ultrasound, thermo-graphy, milk-scanners, computer-differential diagnosis.

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Pathomorphological evaluation peculiarities of the effectiveness of vaccination against swine mycoplasma (p. 133–137)

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The course paper presents a comprehensive assessment of swine respiratory diseases in pig farming and studies the peculiarities of pathoanatomical pattern of swine mycoplasmosis. A productive research has been conducted based on the use of “Chiogen” vaccine against swine mycoplasma, suggested by a French enterprise “Seva Sante Animale”. Upon drawing conclusions from research we compared productive rates of fattening livestock: live weight, the duration of fattening, livestock mortality, and the level of mycoplasma involvement of lungs both after being vaccinated with “Chiogen” and not.

During the post-butcher examination at the slaughterhouse 102 lung samples of commercial standard pigs were analysed. The data obtained confirms that within the experimented group the duration of fattening period was 10 days lower, livestock livability was 3,1 % higher and average daily gains of live weight increased by 60 grams. This positive trend is due to a decrease in the level of mycoplasma involvement of lungs after vaccination.

It has been found that “Chiogen” vaccine reduces pathological lung lesion up to 13%, apical lobes sealing up to 7 %, and there were no adhesion and scars at all compared to the unvaccinated group. Thus, “Chiogen” vaccine produced by the French company “Seva Sante

Animale” reduces pathological lesions with typical pathoanatomical changes, common to *M. Hyo*. The proposed vaccine generates a complete protection against enzootic pneumonia, respiratory diseases and mixed bacterial and viral infections of livestock, increases daily gain of live weight and adjusts the immune status of the animals.

Keywords: mycoplasmosis, enzootic pneumonia, vaccination, pigs, livestock safety, body weight increasing, slaughtering pathological assessment

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