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Therapeutic and preventive measures against helminth infections on sheep farms

Qo'ychilik xo'jaliklarida gelmintozlarga qarshi davolash-profilaktika chora-tadbirlari

Лечебно-профилактические мероприятия против гельминтозов в овцеводческих хозяйствах

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ENGLISH

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Abstract. This article examines the main helminthic diseases encountered on sheep farms, their epizootological characteristics, economic losses, and effective treatment and prevention methods. It also analyzes the negative impact of helminthiasis on sheep productivity, the importance of timely disease detection, deworming, and compliance with sanitary and hygienic standards.

Keywords: Sheep; helminthosis; helminths; deworming (dehelminthization); prophylaxis; veterinary medicine; livestock farming; parasites; treatment

O'ZBEKCHA

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Annotatsiya. Mazkur maqolada qo'ychilik xo'jaliklarida uchraydigan asosiy gelmintoz kasalliklari, ularning epizootologik xususiyatlari, iqtisodiy zarari hamda ularga qarshi samarali davolash va profilaktika tadbirlari yoritilgan. Gelmintozlarning qo'ylar mahsuldorligiga salbiy ta'siri, kasalliklarni o'z vaqtida aniqlash, degelmintizatsiya tadbirlarini tashkil etish va sanitariya-gigiyena qoidalariga rioya qilishning ahamiyati tahlil qilingan.

Kalit so'zlar: Qo'y; gelmintoz; gelmintlar; degelmintizatsiya; profilaktika; veterinariya; chorvachilik; parazitlar; davolash

РУССКИЙ

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Аннотация. В данной статье рассматриваются основные гельминтозные заболевания, встречающиеся на овцеводческих фермах, их эпизоотологические характеристики, экономический ущерб, а также эффективные методы лечения и профилактики. Анализируется негативное влияние гельминтозов на продуктивность овец, важность своевременного выявления заболеваний, организация дегельминтизации и соблюдение санитарно-гигиенических норм.

Ключевые слова: овцы; гельминтоз; гельминты; дегельминтизация; профилактика; ветеринария; животноводство; паразиты; лечение

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1. KIRISH

Introduction

Kirish. Qo'ychilikni rivojlantirish va ularni bosh sonini ko'paytirish, ulardan olinadigan mahsulotlar-teri, go'st va junning miqdoriy va sifat ko'rsatkichlarini yaxshilashda turli xil yuqumli va parazitlar kasalliklarga qarshi chora-tadbirlarni amalga oshirish muhim ahamiyatga ega. Ayniqsa qo'ychilik xo'jaliklarda keng tarqalgan, qo'y-echkilarning og'ir kasallanishi, ayrim hollarda esa "mol chiqimi"ga sabab bo'ladigan kasalliklar – gelmintozlarga qarshi davolash va profilaktik chora-tadbirlarni muntazam ravishda va sifatli amalga oshirish chorvadorlar, mutaxassislar oldida turgan muhim vazifalardan biri bo'lib hisoblanadi.

Mazkur muammoning dolzarbligi va ahamiyati shundan iboratki, qo'y-echkilar yil davomida, qishin-yozin yaylovda boqilishi sababli ular turli xil gelmintozlarga chalinadilar, chunki yaylov qo'y-echkilarning bu kasalliklar bilan zararlanishining birdan-bir manba'i bo'lib hisoblanadi. Ayniqsa oshqozon-ichak strongilyatozlar (nematodiroz, marshallagioz, trixotsefalyoz va boshq.), moniezioz, diktikaulyoz kabi gelmintozlarni qo'zg'atuvchi gelmintlar tuxum va lichinkalari bilan qo'ylar yaylovda o't-xashak orqali zararlanadilar. Shuning uchun gelmintozlarga qarshi kurash chora-tadbirlarini har bir mintaqada, har bir hudud va xo'jaliklar sharoitini hisobga olgan holda, ma'lum reja asosida muntazam, to'liq hajmda va sifatli amalga oshirish lozim.

Respublikamizda olib borilgan keng-ko'lamli va ko'p yillik ilmiy tadqiqotlar (N.V.Badanin, 1949; Ya.D.Nikolskiy, 1959; I.X.Irgashev, 1963, 1973; Dj. Azimov, 1963; B.S.Salimov, 1965, 1974; A.O.Oripov, 1968, 1983; Sh.A.Azimov, 1974; G.S.Po'latov, M.A. Aminjonov, A.R. Ro'zimurodov, A.S. Daminov, Sh.A.Djabbarov, N.E. Yuldoshev, U.E. Temurovlar va boshq.) natijasida gelmintozlarga qarshi davolash-profilaktika chora-tadbirlarining hajmi va optimal muddatlari, har bir gelmintoz va gelmintozlar guruhiga qarshi chora-tadbirlar tizimlari ishlab chiqilgan. Jumladan, qo'ychilik xo'jaliklarda keng tarqalgan oshqozon-ichak nematodozlar –trixotsefalyozlar (marshallagioz, nematodiroz, gemonxoz, ostertagioz, trixotsefalyoz), xabertioz, ezafagostomoz, bunostomoz va trixotsefalyoz kabi nematodozlar qo'ylar orasida ancha keng tarqalgan va katta iqtisodiy zarar etkazadi. Bu gelmintozlar bilan o'rtacha zararlangan har bir bosh qo'yning tirik vazni 5 kg, gacha kamayadi, jun mahsuldorligi esa 0,450-0,500kg. kam bo'ladi.

2. NEMATODOZLAR VA SESTODOZLARGA QARSHI CHORA-TADBIRLAR

Control measures against nematode and cestode infections

Oshqozon-ichak nematodozlarining tarqalishi, ular bilan qo'ylarning zararlanishi hayvonlarning yoshi va yil fasllariga qarab o'zgaradi. Ammo bu gelmintozlar bilan qo'ylar ko'proq qish-bahor va ko'z oylari zararlangan bo'ladi. Har bir oshqozon-ichak nematodozlarining mavsumiy o'zgarishlariga qarab quyidagi chora-tadbirlar tavsiya etiladi:

- cho'l-yaylov mintaqada joylashgan xo'jaliklarda qo'zilarni yil davomida 1 marta – avgust-sentabr oylarda katta yoshdagi qo'y-echkilarni esa ikki marta, ya'ni birinchi marta mart-aprel oylarida (to'ldan keyin) ikkinchi marta kuzda – noyabr oyida rejali, ya'ni davolash degelmintizatsiyani amalga oshirish lozim.

- tog'-tog'oldi mintaqada joylashgan xo'jaliklar yoki yozda qo'ylar tog'li hududlarda boqiladigan hollarda barcha yoshdagi qo'ylarni yil davomida 3 karra degelmintizatsiya qilish, ularni may, iyul va sentabr oylarda amalga oshirish maqsadga muvofiqdir.

- sug'oriladigan mintaqadagi shirkat fermer-dehqon xo'jaliklarda yoki kuz-qish mavsumida "angorda" boqiladigan qo'ylarni birinchi marta aprelda (angordan yozgi yaylovga o'tishdan oldin), ikkinchi marta iyulda (yozgi yaylov davrida) va uchinchi marta sentabr-oktabr oylarida degelmintizatsiya qilish lozim.

Diktikaulyoz (qilqurt)ga qarshi davolash degelmintizatsiyani sug'oriladigan mintaqada aprel-may va oktabr-noyabr oylari, tog'-tog'oldi mintaqadagi xo'jaliklarda bahorda – may oyida, yozda – iyulda va 3-nchi, kuzgi degelmintizatsiyani sentyabr-oktabr oylarida o'tkazish lozim. Cho'l-yaylov mintaqasida esa bahorgi degelmintizatsiyani mart-aprel oylari, kuzda esa oktabr-noyabrda, oshqozon-ichak nematodozlariga qarshi degelmintizatsiya bilan bir vaqtda amalga oshirish maqsadga muvofiq.

Moniezioz va boshqa anoplotezefalyozlar (ichak sestodalari) – tizaniezioz va avitellinozga qarshi qo'y-echkilarni cho'l-yaylov va sug'oriladigan mintaqalarda aprelda va oktabr-noyabr oylari, tog'-tog'oldi mintaqasida esa may oyida va sentyabr-oktabrda degelmintizatsiya qilish lozim. Degelmintizatsiya qo'ylarga birmabir yoki guruh usuli bilan antgelmint preparatlarni berish bilan amalga oshiriladi:

Bu gelmintozlarga, ya'ni oshqozon-ichak nematodozlar, diktikaulyoz va monieziozga qarshi degelmintizatsiyani antgelmint ta'sir doirasi keng bo'lgan preparatlar – albendazol (alben, valbazen), fenbendazol (panakur, fenkur va boshq.), mebendazol, tetramizol kabi hozirgi zamon antgelmint preparatlari bilan amalga oshirish tavsiya etiladi.

3. TREMATODOZLARGA QARSHI CHORA-TADBIRLAR

Control measures against trematode infections

Olingan ma'lumotlarga ko'ra respublikamizda 30-40 foiz qo'ylar (o'rta hisobda) fassiolozning qo'zg'atuvchilari bilan zararlangan bo'lib, ularning 20-30 foizi Fasciola hepatica, 8-10 foizi F. gigantica, 1,5-2,0 foizi har ikkala tur fassiolalar bilan zararlangan. Qo'ylarda topilgan fassiolalarning 69,2 foizi F. hepatica, 30,8 foizi esa F. gigantica turlariga mansub ekanligi aniqlangan.

Fassioloz, orientobilgarsioz va paramfistomatozlar kabi trematodozlar sug'oriladigan, tog'-tog'oldi mintaqalar, ochiq suv manbalari mavjud bo'lgan, bu suv manbalari fassioloz va boshqa trematodozlar qo'zg'atuvchilarining oraliq xo'jayinlari – chuchuk suv mollyuskalari bo'lgan hududlarda bu kasalliklar jiddiy muammo bo'lib, ular qo'ylarni og'ir kasallanib nobud bo'lishiga sabab bo'ladi.

Qo'ychilik xo'jaliklarida fassioloz va orientobilgarsiozning oldini olish uchun eng avvalo qo'ylarni bu kasallikdan nosog'lom bulgan yaylovlarda, angor(o'rim-yig'imdan keyin)da, qoramollar boqiladigan yaylovda va ular bilan birga boqishdan voz kechish lozim. Qo'ylar kiritiladigan hududlarning yaylovi oldin gelmintologik baholanib keyin qo'y boqilishi lozim.

Qo'ylar sug'oriladigan suv manbalari ko'zdan kechirilib bu manbalarda mollyuskalar, o'sib-rivojlanishi uchun shart-sharoit bor-yuqligi aniqlanib, suv manbalari gelmintozlarning tarqalishiga sabab bo'laolishi yoki bo'laolmasligi to'g'risida prognozlar ishlab chiqish lozim.

Fassioloz va orientobilgarsiozga qarshi kurashda barcha gelmintozlarga kurash singari, eng asosiy chora-tadbir degelmintizatsiya bo'lib hisoblanadi. Bu kasalliklar, ya'ni fassioloz, orientobilgarsioz va ayrim paramfistomatozlariga qarshi davolash degelmintizatsiyani yil davomida 3 marta – aprel-may, sentabr-oktabr va dekabr-yanvarda o'tkazish kerak. Bu trematodozlar bilan qo'ylar asosan yozda (iyun-avgust oylarida) intensiv zararlanishni hisobga olib kuzgi, ya'ni sentyabr-oktabrda, ayrim hollarda, ya'ni zaruriyat tug'ilganda noyabr-dekabrda o'tkaziladigan "majburiy" degelmintizatsiyani yosh, voyaga yetmagan, ya'ni preimaginal fassiolalarga ta'sir qiladigan antgelmint preparat (dori)lar – tarkibida klozantel, prozikvotel bo'lgan preparatlar (rolenol, klozan, klozantel-100 va boshq.) bilan amalga oshirish lozim.

DECLARATIONS

Declarations

Author contributions *CRedit*

Conceptualization; Methodology; Investigation; Data curation; Writing – original draft; Writing – review & editing. All authors have read and agreed to the published version of the manuscript.

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Not applicable. This study did not involve humans, animals or other regulated materials.

Informed consent

All authors have read and approved the final version of the manuscript and have given their consent to its submission and publication. The study involved no human participants and no personal data.

Data availability statement

All data supporting the findings of this study are presented in the article and are available from the corresponding author upon reasonable request.

Conflict of interest

The authors declare no conflict of interest.

Generative AI disclosure

Generative AI was used only partially. The authors used Claude (Anthropic, Opus 5) for language editing, formatting of the reference list and preparation of the English and Russian metadata. No text, data, figures or conclusions were generated by AI. The authors reviewed and verified all output and take full responsibility for the content of the publication.

EXTENDED SUMMARY IN ENGLISH

Kengaytirilgan inglizcha xulosa / Расширенный реферат на английском языке

Mandatory for all articles whose full text is not in English. Length 600–1000 words. It must be independently readable: a reader who does not know the language of the full text should understand the problem, the method, the numerical results and the contribution without consulting the main text. Do not copy the 250-word abstract.

Purpose and research problem

Sheep farming in Uzbekistan depends on the systematic and high-quality implementation of control measures against infectious and parasitic diseases, and among these the helminth infections occupy a special place because they cause severe illness and, in some cases, mortality. The relevance of the problem follows from the husbandry system itself: sheep and goats are grazed on pasture all year round, winter and summer, and pasture is the single source of infection with the eggs and larvae of gastrointestinal strongylids (nematodirosis, marshallagiosis, trichocephalosis and others), moniesiosis and dictyocaulosis, which the animals acquire with the grass. The aim of the article is to set out the principal helminth infections encountered on sheep farms, their epizootiological characteristics and economic damage, and the effective therapeutic and preventive measures against them, taking into account the conditions of each zone and farm.

Materials and methods

The article generalises the results of extensive and long-term research carried out in Uzbekistan by N.V. Badanin (1949), Ya.D. Nikolsky (1959), I.Kh. Irgashev (1963, 1973), Dj. Azimov (1963), B.S. Salimov (1965, 1974), A.O. Oripov (1968, 1983), Sh.A. Azimov (1974), G.S. Po'latov, M.A. Aminjonov, A.R. Ro'zimurodov, A.S. Daminov, Sh.A. Djabbarov, N.E. Yuldoshev, U.E. Temurov and others, on the basis of which the volume and optimal timing of therapeutic and preventive measures and the systems of control for each helminthiasis and group of helminthiases were developed. The zonal principle is applied throughout: the desert-pasture zone, the mountain and foothill zone, and the irrigated zone are treated separately, since the seasonal

dynamics of infection and therefore the deworming calendar differ between them.

Results and discussion

Among the gastrointestinal nematodoses of sheep the trichostrongylidosis — marshallagiosis, nematodirosis, haemonchosis, ostertagiosis and trichostrongylosis — together with chabertiosis, oesophagostomosis, bunostomosis and trichocephalosis are widespread and cause considerable economic damage: the live weight of a moderately infected sheep falls by up to 5 kg and its wool productivity by 0.450–0.500 kg. Infection varies with the age of the animal and the season, but is heaviest in the winter–spring and autumn months. On this basis the article recommends, for farms of the desert-pasture zone, one planned deworming of lambs a year in August–September and two dewormings of adult sheep and goats, the first in March–April after lambing and the second in November; for farms of the mountain and foothill zone, or where sheep are summered in the mountains, three dewormings of all age groups in May, July and September; and for farms of the irrigated zone or flocks kept on stubble in autumn and winter, dewormings in April before the move to summer pasture, in July during the summer pasture period and in September–October. Against dictyocaulosis the corresponding periods are April–May and October–November in the irrigated zone, May, July and September–October in the mountain and foothill zone, and March–April and October–November in the desert-pasture zone, the last carried out together with the deworming against gastrointestinal nematodoses. Against moniesiosis and the other anoplocephalidoses — thysanosesiosis and avitellinosis — deworming is carried out in April and October–November in the desert-pasture and irrigated zones and in May and September–October in the mountain and foothill zone. Modern broad-spectrum anthelmintics are recommended for all of these: albendazole (alben, valbazen), fenbendazole (panacur, fencur), mebendazole and tetramisole. As regards the trematodoses, on average 30–40 % of sheep in the republic are infected with the agents of fasciolosis, of which 20–30 % carry *Fasciola hepatica*, 8–10 % *F. gigantica* and 1.5–2.0 % both species; of the fasciolids found in sheep, 69.2 % belong to *F. hepatica* and 30.8 % to *F. gigantica*. Prevention rests first of all on avoiding pastures unfavourable for the disease, stubble grazing, cattle pastures and mixed grazing with cattle, on the helminthological assessment of pastures before sheep are admitted, and on surveying the watering points for the presence of the freshwater molluscs that serve as intermediate hosts. Therapeutic deworming against fasciolosis, orientobilharziosis and some paramphistomatosis is carried out three times a year — in April–May, September–October and December–January — and the compulsory autumn deworming must be performed with preparations active against preimaginal fasciolids, that is those containing closantel or praziquantel (rolenol, klozan, closantel-100 and others).

Conclusion and contribution

Control of helminth infections on sheep farms cannot rest on a single therapeutic agent. It requires a planned, systematic and complete programme of deworming whose timing is set according to the natural and economic zone, the seasonal dynamics of each infection and the conditions of the individual farm, supported by the helminthological assessment of pastures and watering points, the correct choice of grazing regime and adherence to sanitary and hygienic rules. For the trematodoses in particular, the choice of a preparation active against immature flukes for the autumn deworming is decisive. The contribution of the article is to bring the zonal deworming calendars for nematode, cestode and trematode infections of sheep together in a single practical scheme that veterinary specialists and livestock keepers can apply directly.

ADABIYOTLAR RO'YXATI

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Adabiyotlar matnda birinchi keltirilish tartibida raqamlanadi. Oltitagacha muallif to'liq ko'rsatiladi; DOI mavjud bo'lsa, albatta beriladi.

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