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👤 *Sawsan M. Jabbar AL-Hasnawi, Abeer Thaher Naji AL-Hasnawi.*

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Protein Isolation from Sponge Niphates sp. as an Antibacterial and Antioxidant

👤 *Warsidah, Masrianih, Mega Sari Juane Sofiana, Ikha Safitri, Ajuk Sapar, Anthoni B. Aritonang, Yuges Saputri Muttalib, Dzul Fadly.*

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👤 *Juni Jekti Nugroho, Andi Sumidarti, Mufliha Siri, Muhammad Husni Cangara, Nurhayaty Natsir, Maria Tanumihardja, Noor Hikmah, Asrianti.*

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👤 *Khaerul Fahmi, Temmy Kurniawan, Yoyok Cahyono, Afen Sena, Suhadarliyah, Popong Suryani, Agus Sugianto, Dahlia Amelia, Musnaini, Shofia Amin, Husni Hasbullah, M. Jihadi, Hadion Wijoyo, Agus Purwanto.*

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👤 *Sovia Indah Nurkhanifah, Siti Ari Budhiyanti, Amir Husni.*

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👤 *Eka Dian Sofiana, Junianto Wika Adi Pratama, Mustofa Helmi Effendi, Hani Plumeriastuti, Freshindy Marissa Wibisono, Erwan Budi Hartadi, Akvyan Rafi Hidayatullah.*

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Synergistic Effect between Zingiber Officinale Volatile Oil and Meropenem against Acinetobacter Baumannii Producing-Carbapenemase Isolated from Neurosurgery in Iraq


 Safaa A.L. Al Meani, Mohammed M. Ahmed, Ali H. Abdulkareem.

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Distinctive Therapeutic Strategies against Corona Virus-19 (COVID-19): A Pharmacological Review


 Yousra A. Nomier, Devulapalli S. Rao, Ahmed H. Suhaqi, Rayan A. Ahmed.

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Effect of Diabetic Ketoacidosis on Some Biochemical and Immunological Variables

 Oqbah Abdul Halim, Qasim Khlaif Abdullah, Asmaa wajah jumaa.

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Platelets Profile Changes in Patients with COVID 19

 Safaa jawad kadhemi, Ahmed Hasan Raheem, Hassan Salim aljumaily, Ahmed Abdul Haleem Al shammari, Ameer Kadhimi Al-Humairi, Ali Baay.

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Wives' Perceptions of Husbands with Erectile Dysfunction in Indonesia: The Fulfilment Pattern of the Wife's Sexual Partner Who Experiences Erectile Dysfunction due to Diabetes Mellitus

 Abd. Nasir, Susilo Hariyanto, Nuruddin, Iswatun, Supatmi, Nuh Huda.

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Effect of Career, Organizational Commitment on Turnover Intention through Mediation of Organizational Culture: Evidence from Indonesian Companies

 Nico Alexander Vizano, Wiwik Utami, Sigmin Johanes, Aty Herawati, Havis Aima, Achmad H Sutawijaya, Agus Purwanto, Joko Supono, Puji Rahayu, Aris Setiyani, C Catur Widayati, Farida Elmi.

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Social Network for Drug Circulation in Sidenreng Rappang Regency, Indonesia

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 Mohammad Dharma Utama, Acing Habibie Mude, Muhammad Ikbali, Vinsensia Launardo, Adriani Dachri.

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 Marwan A. Hasan, Rebwar O. Hasan, Khalid F. Al-Rawi.

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Effect of pH, Temperature and Metal Salts in Different Storage Conditions on the Stability of Vitamin C Content of Yellow Bell Pepper Extracted in Aqueous Media

 Husni S Farah, Jehad F Alhmoud, Atef Al-Othman, Khalid M Alqaisi, Ali M Atoom, Khalid Shadid, Ashok Shakya, Talal AlQaisi.

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Potential Impact of micro RNA-146a Gene Polymorphisms in Oxidative Stress of Diabetic Mellitus Type 1


 Fulla Abd Alsatat Alriyahee, Noora M. Hameed, Israa Harjan Mohsen, Mona N. Al-Terehi.

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 Danang Hidayatullah, Anis Eliyana, Hamidah, Tuty Sariwulan, Agung Dharmawan Buchdadi.

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Effectiveness of Finger Held Relaxation on the Decrease in Intensity of Pain in Patient of Post-Sectio Caesarea in RSUD Sorong Regency


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 *Desy Kartina, Abdul Wahid Wahab, Ahyar Ahmad, Rizal Irfandi, Prihantono, And Indah Raya.*

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Construction and Preliminary Validation of the COVID-19 Pandemic Anxiety Scale

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ENHANCING EMPLOYEE PERFORMANCE WITH WORK MOTIVATION AS A MEDIATION VARIABLE

Qori Al Banin, Anis Eliyana, Eva Risalatul Latifiyah.

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Hendra Achmadi, Ferdi Antonio, Rudy Pramono, Innocentius Bernarto, Agus Purwanto

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The Impact of Motivation Mediation and Its Effect on the Level of Education and Work Facilities on Employee Performance (Case Study of Education Office, West Sumatera Province)

Agussalim M, Novi Yanti, Hisar Sirait.

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Review Article

A Review of the Opportunistic Pathogen Citrobacter Freundii in Piglets Post Weaning : Public Health Importance

Akvyah Rafi Hidayatullah, Mustofa Helmi Effendi, Hani Plumeriastuti, Freshindy Marissa Wibisono, Erwan Budi Hartadi, Eka Dian Sofiana.

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Review Article

DISPARITIES OF THE USE OF HORMONAL AND NON-HORMONAL CONTRACEPTIVE DRUGS IN URBAN AND RURAL AREAS IN INDONESIA AND THE WORLD

Agustina Abuk Seran, Myrtati Dyah Antaria, Setya Haksama, Ema Setjaningrum, Agung Dwi Laksono, Anita Dewi Prahastuti Sujoso.

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Research Article

Antidiabetic Activity of Papaya Leaf Extract (Carica Papaya L.) Isolated with Maceration Method in Alloxan-Induces Diabetic Mice

Tridiganita Intan Solikhah, Boedi Setiawan, Dilian Ramdana Ismukada.

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Health Care Professional Attitude and Motivation During COVID-19: A Case of Health Sector of Oman

Ismail AlAbri, Rusinah bte Siron.

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Research Article

Develop Leadership Style Model for Indonesian Teachers Performance in Education 4.0 Era

Anissa Lestari Kadiyono, Rezki Ashriyana Sulistiobudi, Ikhfan Haris, Mohd Khaidir Abdul Wahab, Idan Ramdani, Agus Purwanto, Abdul Mufid, Muhammad Rikza Muqtada, M. Gufron, Mohamad Nuryansah, Lina Aris Ficayuma, Mochammad Fahlevi, Susila Sumartiningsih.

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Review Article

EMPOWERMENT OF JUNIOR HIGH SCHOOL STUDENTS IN PREVENTION EARLY-AGE MARRIAGE IN GUNUNG KIDUL DISTRICT

Masruroh Masruroh, Soetrisno Soetrisno, Mahendra Wijaya, Sapja Anantanyu.

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The Impact of Social Capital, Entrepreneurial Competence on Business Performance: An Empirical Study of SMEs

Ahmad Yani, Anis Eliyana, Hamidah, I Ketut R. Sudiarditha, Agung Dharmawan Buchdadi.

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The Impact of Mass Media and Food Consumption

Abubakar Iskandar, R. Oetje Subagdja, Maria Fitriah, Sukarelawati.

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More Meat, More COVID-19 Cases? Comparative Study between USA and China in Importing Mutton

Maslichah Mafruchati.

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Research Article

CYP24A1 and AHR Gene Expression in Iraqi Colorectal Cancer Patients

Wathiq Abbas Aldrghi, Alaa Makki Jabbar Shafeea, Nawal Mehdi Alkhalidi.

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The Effect of Transformational Leadership on Employee Creative Self Efficacy with Creative Role Identity as a Mediation Variables

Barika, Anis Eliyana, Hamidah, Agung Dharmawan Buchdadi, Rengga Zulfiansyah Lakspakarti.

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Research Article

Cytotoxic Effect of Essential Oil from Cinnamon (*Cinnamomum burmannii*) Bark on Rat Bone Marrow Mesenchymal Stem Cells: In Vitro Study

Budiasuti, Niken Dwi Lestari, Mustofa Helmi Effendi, Arimbi, and Hani Plumeriastuti.

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Privacy Preserving Data Publishing for Heterogeneous Multiple Sensitive Attributes with Personalized Privacy and Enhanced Utility

Jayapradha. J, Prakash. M, Yenumula Harshavardhan Reddy.

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[» Abstract](#) [» PDF](#) DOI: 10.31838/srp.2020.9.151

Research Article

Management's Initial Thought in the Industrial Era 4.0 and Millennialization, Is It Still Relevant?

Rosa Rilantiana, Anis Eliyana, Djoko Suprayetno, Kresno Eka Mukti.

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Research Article

Study the Effect of Gabapentin on the Histology of Some Organs of Male rats

Fakhir M. ALzubaidy, Aymen A Bash, Raad Jasim.

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Research Article

Bioactivity of Amomum Compactum Soland Ex Maton (Java Cardamom) as a Natural Antibacterial

Tyagita Hartady, Roostita Lobo Balia, Mas Rizky Anggun Adipurna Syamsunarno, Sabri Jasni, Bambang Pontjo Priosoeryanto.

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Improving White Box Testing Using Bi ? Directional Symbolic Analysis and Test Case Slicing

P. Velmurugan, S. Ganesh Kumar

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Effect of Protecting Proteins from Degradation in the Rumen on Single Volatile Fatty Acid of Al Awassi Lambs

Dr. Ibrahim S. Jasim.

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[» Abstract](#) [» PDF](#) DOI: 10.31838/srp.2020.9.56

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Improving Kernel Weight and Number in Some Maize Subspecies Crosses

M.M. Elshahookie, Saddam H. Cheyed A.A. Dawood.

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Bilingual Education Learning to Engage in Academic Activities

Chen, I-Ju, Chang, Yu-Heng, Wey, Tzong-Ming.

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Review Article

Post-operative Obturator after Maxillectomy: A Systematic Review


Irfan Dammar, Acing Habibie Mude, Muhammad Ikbali, Yusalvi Rivai

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Research Article

[Epidemiological Study of Giardia lamblia in Tikrit city, Iraq](#)


 *Turkan Ahmad Hama Hasan, Abdul Khaleq Alwan Muhaimid, Ayhan Rashid Mahmoud.*

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Review Article

[Beef, Pork, or Lamb? Comparative Study Between 3 Kinds of Red Meat Consumption in the USA toward the Number of COVID Cases](#)


 *Maslichah Mafruchati.*

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Short Communication

[ANALYTIC STUDY OF ENDODONTIC WORKING LENGTH VARIATION OF MAXILLARY CANINE IN BASRAH GOVERNORATE](#)


 *Zainab Abdulkareem Maktoof, Zahraa Mazin Al-Hawwaz, Hiyam Salah Ahmed.*

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Research Article

[Effect of Protecting Proteins from Degradation in the Rumen on Rumen Fermentations of Al Awassi Lambs](#)

 *Dr. Ibrahim S. Jasim.*

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[» Abstract](#) [» PDF](#) DOI: 10.31838/srp.2020.9.57

Review Article

[nCD64, mHLA-DR: Sensitive Diagnostic Markers of Infection in Term Infants Receiving Antibiotic Treatment](#)


 *Nguyen Thi Ngoc Tu, Le Thanh Hai, Truong Thi Mai Hong, Pham Thu Hien, Le Thi Ha, Doan Thi Mai Thanh.*

SRP. 2020; 11(9): 1077 - 1081

[» Abstract](#) [» PDF](#) DOI: 10.31838/srp.2020.9.154

Research Article

[Overview of Metabiotics and Probiotic Cultures During Fermentation of Molasses](#)

 *V.S. Popov, N.V. Vorobyeva, G.A. Svazlyan, N.M. Naumov, O.A. Gryaznova.*

SRP. 2020; 11(9): 813 - 817

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Research Article

[The Protective Effect of Omega3 Against Amikacin- Induced Nephrotoxicity in Rats](#)

 *Afrah Thiab Hlail, Hadeel Rashid Faraj, Wafa S. Abdulredha.*

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[Dynamics of Immune Status in Myofibrillar Myopathy with the T341P DES Mutation](#)


 *Viacheslav Yurievich Pauls.*

SRP. 2020; 11(9): 818 - 824

[» Abstract](#) [» PDF](#) DOI: 10.31838/srp.2020.9.116

Research Article

[Develop Model of Transactional, Transformational, Democratic and Authoritative Leadership Style for Indonesian School Performance in Education 4.0 Era](#)


 *Irjus Indrawan, Evanirosa, Ramsah Ali, Indra, Ramadan, Muh. Hanif, Ihsan Harun, Lathifah Hanum, Agus Purwanto, Abdul Mufid, Siti Nurkayati, Mochammad Fahlevi, Susila Sumartiningsih.*

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Research Article

[The Validity of CXR in the Screening & Detection of Endobronchial Lung Cancer in Iraqi Patients](#)


 *Ameer Kadhim Al-Humairi, Safaa jawad Kadhem, Ahmed Hussein jasim, Shahad hamid mekki, Zainab Alaa abd-alhussein, Ali Baay.*

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Review Article

[Clinical study of Oral Lichen Planus for a selective sample in Basrah City south of Iraq between 2017-2019](#)


 *Ghaydaa Hashim Al Qudsi, Hussein Sh. Al-Essa and Sundus Abdul Wadood Aljazeera.*

SRP. 2020; 11(9): 1082 - 1090

[» Abstract](#) [» PDF](#) DOI: 10.31838/srp.2020.9.155

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[Treating Groundwater Salinity using Magnetic Field Technology](#)


 *Yassien H. Owaied AL-Juboory, Aseel H. Mahdi.*

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[» Abstract](#) [» PDF](#) DOI: 10.31838/srp.2020.9.20

Research Article

[The Effect Of Virtual Nutrition Education for The Improvement of Mother's Knowledge About Complementary Feeding: Randomized Control Trial](#)

 *Nadimin, Aswita Amir, Sitti Rahmah, Sirajuddin.*

SRP. 2020; 11(9): 825 - 829

[» Abstract](#) [» PDF](#) DOI: 10.31838/srp.2020.9.117

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[Synthesis of Heterocyclic Nitrogen Compounds using Cyclohexene Derivative with Various Primary Amines](#)

 *Hamid J. Mohammad, Israa I. Salih, Rabeah T. Mahmood.*

SRP. 2020; 11(9): 124 - 129

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Research Article

[The Oxidative Stress Induced by the Vapours of Electronic- Hookah on Mice Liver Tissues](#)

 *Rasha Shaker Nima, Dhifaf Zeki Aziz.*

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Review Article

[The Intervention of the Pirfenidone with Pericyst Layer Building of the Hydatid?? Cyst](#)


 *Yousif Tawfeeq, Ahmed A. Mohammed, Yassir Mustafa Kamal.*

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Research Article

[In Vitro Antiviral Activity of Morin Compound against Dengue Virus Type 1 in Vero Cells](#)

 *Anisa Maharani, Teguh H. Sucipto, Harsasi Setyawati, Yovilianda M. Untoro, Novia F. Sholihah, Siti Churrotin, Ilham H. Amarullah, Puspa Wardhani, Aryati, Soegeng Soegijanto.*

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[» Abstract](#) [» PDF](#) DOI: 10.31838/srp.2020.9.118

Research Article

[Effect of Stick Sweet Cherry \(Prunus aviam\) on the Reproductive System of Male Mice](#)


 *Wasnaa H. Mohammed, Hamssa E. Abdul-Wahed, Zahraa A. Sharba.*

SRP. 2020; 11(9): 130 - 134

[» Abstract](#) [» PDF](#) DOI: 10.31838/srp.2020.9.22

Research Article

[Relative Indicators and Predicative Ability of Some Biological Variables on Cardiac Neural Activity for Volleyball Players](#)


 *Mohammed Nader Shalaby, Marwa Ahmed Fadl.*

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[» Abstract](#) [» PDF](#) DOI: 10.31838/srp.2020.9.119

Review Article

[Investigate the Strategy of Using Pharmacogenetics and Pharmacometabonomics to the Personalization of Ticagrelor Antiplatelet Therapy](#)


 *Mohammed Ahmed Akkaif, Abubakar Sha'aban, Nur Aizati Athirah Daud, Mei Li Ng, Baharudin Ibrahim.*

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[» Abstract](#) [» PDF](#) DOI: 10.31838/srp.2020.9.157

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[EEG Changes in Patients with Functional Psychosis in Babylon Province](#)


 *Huda Abd Ali Hussien, Waleed Azeez AL-Ameedy, Farah Nabil Abass.*

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[» Abstract](#) [» PDF](#) DOI: 10.31838/srp.2020.9.23

Research Article

[Comparison of Macro Nutritional Value, Dissolved Protein, Amino Acids and Minerals of Fresh and Crispy-Product of Anchovy \(Stolephorus Commersonii\)](#)


 *Fronthea Swastawati, Putut Har Riyadi, Hersanti Sulistyaningrum, Sepsina Resky, Slamet Suharto.*

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Research Article

[Defensive Effects of Breberine against Cypermethrin Induced Male Reproductive System Toxicity in Rabbits](#)

 *Hawraa M. Murad, Shurooq Asaad Abdulameer, Dhuha Salman Asker Aljuboory, Dheyaa A. Neamah, Ali Hamza Maktouf.*

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Research Article

[The Concept of Illness among Ethnic Groups in Indonesia: A Meta-Ethnographic Study](#)

 *Agung Dwi Laksono, Ratna Dwi Wulandari, Zainul Khaqiqi Nantabah, Zulfa Auliyati Agustina, Ira Ummu Aimanah, Rukmini Rukmini, Yunita Fitrianti, Yurika Fauzia Wardhani, Diyan Effendi, Suharmiati Suharmiati, Lestari Handayani, Niniek Lely Pratiwi*

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Effects of Cinnamon and Their Beneficial Content on Treatment of Oxidative Stress

Oras Khalis yaseen, Mustafa Taha Mohammed.

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Incidence of Mumps in Hilla City

Harith Fathi AL-Asady, Lateef Hussien AL-Khafaji, Safaa Sahib Naji.

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[» Abstract](#) [» PDF](#) DOI: 10.31838/srp.2020.9.24

Research Article

Vitamin D3 for Health and Muscle Functions of Athletes

Mohammed Nader Shalaby, Mona Mostafa Abdo Sakoury, Salman Mohammed Harthi, Faleh Mohammed Alshalawi, Marwa Mohammed Alhajji, Zahraa Hassan Alshaikh, Alhanouf Hassan Aljaber.

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Research Article

Exploration of the Relationship Between Interleukin 37 and Folic Acid in Type 2 Diabetic Patients

Anwar A. Hussain, Khalid F. Al-Rawi, Aseel Khalid Hameed.

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The Correlation of Google Trends as an Alternative Information Source in the Early Stages of COVID-19 Outbreak in Indonesia

Elly Usman, Ricvan Dana Nindrea.

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Review Article

The Study of Genetic Variations of Human Testis-Expressed Protein 101 (TEX 101) and Hormonal Levels of Fertile and Infertile (Oligospermia) Men

Baraa Ahmed Saeed, Rayah S. Baban, Usama Al-Nasiri.

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Research Article

The Relationship between Vitamin D Deficiency and Interleukins 8 and 10 in Diabetes Mellitus

Sura Mustafa Qasim, Alaa Zanza Ra'ad Al-dorri, Mohanad Hasan Mahmood Al-Izzi.

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Enhancing Antimicrobial Properties of Food Packaging Sheets by Incorporating ZnO- Nanoparticles (NPs)

Ali R Mulakhudair and Zahraa Reasan Kareem Shati.

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Research Article

Do Servant Leadership Influence Market Performance? Evidence from Indonesian Pharmacy Industries

Yoyok Cahyono, M. Jihadi, Zainal Arifin, Wulan Purnamasari, Musnaini, Hadion Wijoyo, Fitriaty, Riyan Sisiawan Putra, Rizki Amalia Putri, Dadah Muliandyah, Popong Suryani, Agus Purwanto.

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Review Article

Effect of Xanthium Strumarium Extract on Some Virulence Factor of Proteus Mirabilis Isolated from Patients in Ramadi Hospital

Ali Abd Sharad, Omar Almuharib, Najeed Mohammed Hussein.

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Research Article

Assessment of Some Biomarkers Related with Recurrent Miscarriages in Iraq

Yahaya M. Jabber, Alaa Jawad Hassan, Hussein N. Abdullah.

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[» Abstract](#) [» PDF](#) DOI: 10.31838/srp.2020.9.27

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Penicillin for Secondary Prevention of Acute Rheumatic Fever and Rheumatic Heart Disease in Acehnese Children

HERLINA DIMIATI, SOFIA SOFIA, BASRI A. GANI.

SRP. 2020; 11(9): 452 - 457

[» Abstract](#) [» PDF](#) DOI: 10.31838/srp.2020.9.63

Review Article

The Effect of Microbiology Fertilization on the Nitrogen Fixation of Wheat Plant

Fawz A. Al.Saffar, Alaa Hussein Ali Al-Shalal

SRP. 2020; 11(9): 1125 - 1129

[» Abstract](#) [» PDF](#) DOI: 10.31838/srp.2020.9.161

Research Article

Distance Education as an Alternative Form of Learning During a Pandemic

Nataliia Kaliuzhka, Nelia Samoilenko, Larysa Zdanevych, Olesia Kyselova, Nataliia Terentieva, Diana Koval.

SRP. 2020; 11(9): 458 - 461

[» Abstract](#) [» PDF](#) DOI: 10.31838/srp.2020.9.64

Research Article

Correlation between P53 and Ki67 with Aggressiveness Factor in Recurrent Respiratory Papillomatosis


Rizka Fathoni Perdana, Sri Herawati, Muhtarum Yusuf, Irwan Kristyono, Pughu Setya Nugroho.

SRP. 2020; 11(9): 163 - 168

[» Abstract](#) [» PDF](#) DOI: 10.31838/srp.2020.9.28

Review Article

Assessment the Correlation of D-dimer and Ferritin Level in Patients Infected with Covid-19 in Anbar Governorate of Iraq


 Safaa A.L. Al Meani, Ali H. Abdulkareem, Mohammed O. Ibrahim, Mohammed M. Ahmed, Mahmood Yassin Mukhlif.

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[» Abstract](#) [» PDF](#) DOI: 10.31838/srp.2020.9.162

Research Article

Coronavirus: Disrupts the Health of Social Networking Sites (SNS)


 Dahyar Daraba, Ruliando Hasea Purba, Muhammad Faisal, Selfi Ami Susanti.

SRP. 2020; 11(9): 855 - 859

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Research Article

Intervention Model for Barotrauma Diseases to Improve Health and Safety Diving Behaviors in Traditional Fishermen in Small Islands in Makassar, Indonesia


 Syamsiar S. Russeng, Lalu Muhammad Saleh, Awaluddin, M. Rum Rahim, Anwar Mallongi.

SRP. 2020; 11(9): 597 - 600

[» Abstract](#) [» PDF](#) DOI: 10.31838/srp.2020.9.87

Research Article

Information and Innovative Technologies in Distance Learning in Higher Education Institutions of Ukraine


 Inna Ivzhenko, Iryna Sokol, Valentyna Kochyna, Margaryta Noskova, Liliia Yeromina, Valentyna Blokhina.

SRP. 2020; 11(9): 462 - 465

[» Abstract](#) [» PDF](#) DOI: 10.31838/srp.2020.9.65

Review Article

Effect of COVID-19 Virus on Biomass Index of Infected Patients


 Safaa A.L. Al Meani, Mohammed M. Ahmed, Ali H. Abdulkareem, Nihad M. Hamid, Mohammed O. Ibrahim.

SRP. 2020; 11(9): 1134 - 1136

[» Abstract](#) [» PDF](#) DOI: 10.31838/srp.2020.9.163

Research Article

Effect of Adsorbent Composition Variation Quartz Sand/Andisol Soil/Zeolite/Activated Carbon Toward Cu, Pb, Coliform Total and E. coli Treatments on the Citarum River


 Muhammad Sholeh, Pranoto, Sri Budiastuti, Sutarno.

SRP. 2020; 11(9): 169 - 177

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Review Article

Pre-Exposure Prophylaxis for COVID-19 Infection: Current Concepts and Strategies


 Asmaa T Uthman, Noor N Al-Rawi, Natheer Al-Rawi.

SRP. 2020; 11(9): 860 - 865

[» Abstract](#) [» PDF](#) DOI: 10.31838/srp.2020.9.124

Research Article

The Effect of Treating Barley Straw with Fungus (Trichoderma Harzianum) (1): on Growth and Some Carcasses Characteristics of Awassi Lambs

 S.N. Alwaeli, W.H. Al-Samaraei, M.J.H. Al-Tamemmy and Y.M. Al-Saadi.

SRP. 2020; 11(9): 601 - 605

[» Abstract](#) [» PDF](#) DOI: 10.31838/srp.2020.9.88

Review Article

Investigation of the Trichomonas Hominis and Some other Parasites in Cases of Diarrhea Accompanying Children Arriving to the Obstetrics and Gynecology Hospital in Ramadi / Iraq


 Abdulkhalik Alwan Mohemeed, Thaer Abdulqader salih, Qutaiba Ali Saleh Khalaf AL- juboori.

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[» Abstract](#) [» PDF](#) DOI: 10.31838/srp.2020.9.164

Research Article

Six Sigma Benefit for Indonesian Pharmaceutical Industries Performance: A Quantitative Methods Approach


 Hayu Kartika, Defi Norita, Novera Elisa Triana, Iwan Roswandi, Abdul Rahim, Aulia Naro, Titia Izzati, Andary Asvaroza Munita, Didi Junaedi, Wiwit Suprihatiningsih, Agus Purwanto, Candra Setia Bakti.

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Review Article

A Novel Pleiotropic Effect of Beta-Blockers: Useful or Not?


 Tara Mandiricha, Maftuchah Rochmanti.

SRP. 2020; 11(9): 178 - 186

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Research Article

Beta-Oxybutyrates: Biological and Pharmacological Effects

 Bokov D.O., Morozova M.A., Beniashvili A.G., Bessonov V.V..

SRP. 2020; 11(9): 866 - 871

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Research Article

Behavior of Growth and Yield Bread Wheat by the Influence of Fulvic Acid and Seeding Rate


 Hanaa Khudhaier Mohammed Ali Al-Haidary and Safaa A. Al-Zubaidy.

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Review Article

[Studies on microRNA in Pediatric Tuberculosis](#)


 *Ayling Sanjaya, Dwi Yuni Nur Hidayati, Susanthi Djajalaksana, HMS Chandra Kusuma, Sumarno.*

SRP. 2020; 11(9): 1143 - 1149

[» Abstract](#) [» PDF](#) DOI: 10.31838/srp.2020.9.165

Research Article

[PSMA-Specific Peptide with Inhibitor Cystine Knot for Prostate Cancer Treatment](#)

 *Elena Iurova, Ivan Beloblov, Evgenii Beloborodov, Eugenia Rastorgueva, Evgenia Pogodina, Elizaveta Tazintseva, Aleksandr Fomin.*

SRP. 2020; 11(9): 187 - 194

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[Research Activity as a Technology of Activation of Cognitive Activity of Students of Higher Education Institutions](#)

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 *Freshindy Marissa Wibisono, Freshinta Jellia Wibisono, Mustofa Helmi Effendi, Hani Plumeriastuti, Akvyan Rafi Hidayatullah, Erwan Budi Hartadi, Eka Dian Sofiana.*

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Hepatoprotective Activity of Ethanolic Extract of Fresh and Fermented Clam *Meretrix meretrix* from Kalimantan, Indonesia

 *Dzul Fadly, Andi Hairil Alimuddin, Rukman Abdullah, Lili Amaliah, Rafdinal, Shifa Helena, Syarif Irwan Nurdiansyah, Warsidah.*

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[» Abstract](#) [» PDF](#) DOI: 10.31838/srp.2020.9.75

A Review of Salmonellosis on Poultry Farms: Public Health Importance

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ABSTRACT

Salmonella spp. is a bacterial causative agent that can cause salmonellosis in humans and animals. Salmonellosis is categorized as an important zoonotic disease in public health. Infection can be acquired by direct contact and indirect contact with animals. Indirect transmission can occur through contact with the environment around animals or with contaminated objects around poultry farms. Salmonella in humans, which is an infectious disease, has three types of infections, namely typhoid fever, paratyphoid fever, and non-typhoid Salmonella (NTS). Typhoid fever and paratyphoid fever are caused by *S. typhi* and *S. enterica* serovar Paratyphi (*S. paratyphi*), in contrast, *S. typhimurium*, *S. enteritidis*, *Salmonella enterica* serovar newport (*S. newport*), and *Salmonella enterica* serovar heidelberg (*S. heidelberg*) causes non-typhoid Salmonella infection. The distribution of Salmonella is very widespread and persistent in dry environments but can persist in water for up to several months. In poultry, Salmonella can cause clinical disease or subclinical infection in asymptomatic animals which are often referred to as carriers. Infectious disease control in poultry farms always uses antibiotics. High antibiotic use can lead to increased antibiotic resistance. Raising awareness is critical to limiting the inappropriate use of antibiotics.

Keywords: Public health, Antibiotic resistance, Salmonella spp, Salmonellosis, Poultry farms

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INTRODUCTION

QuillBot is going to re-write your email. Start by writing or pasting here something, and then press the paraphrase button. is a bacterial agent that can cause human and animal salmonellosis (1,2). In terms of public health, salmonellosis is regarded as a significant zoonotic disease (3,4). Salmonellosis is a natural, *Salmonella* spp enteric disease. Acid and chronic diarrhoea disease and even death in human and animal patients are typically induced (5-7) A total of 16 million cases of inflammatory fever include salmonellosis, 1.3 billion cases of gastroenteritis and 3 million deaths from *Salmonella*. Worldwide (8) each year. There were 1.2 million cases of non-type salmonellosis, 19,000 in hospital, and 370 deaths last year. Apply salmonella to salmonella. Known as one of the primary causes of foodborne disease (4,9), 11% being due to animal contact (10,11). Direct contact and indirect contact with animals can be used to acquire infection. Indirect transmission may occur through interaction with the animals' environment or contaminated items at farms. *Salmonella* spp infected poultry. It looks good, but can contaminate the surrounding environment and animals (12). Salmonellosis is one of *Salmonella* spp's most common enteric pathogenic diseases. Has a high degree of morbidity and preventive issues (10,13). Poultry is an important reservoir of bacterial agents. Infected poultry can be a source of disease transmission. Pathogenic microorganisms can cause infectious disease, which is the main disease and the highest cause of death in animals and humans (14). The increasing incidence of infectious diseases causes the use of antibiotics to be the most dominant in health services (15,16).

The high use of antibiotics can lead to increased antibiotic resistance. Antibiotics as prevention are used routinely in most cases. The combination preparation of amoxicillin and colistine (60.8%) was the most widely used preparation in several farms. Farmers do not even realize the purpose of using antibiotics. The high use of antibiotics without a prescription is due to the perception of farmers that the use of antibiotics has no side effects and at a low cost as an effort to prevent disease (17). During the last two decades, there has been increasing awareness of the factors causing the incidence of antibiotic resistance in livestock as food of animal origin for health. Thus, antibiotic resistance in one country is currently a problem for all countries (18).

The need for safe and quality animal protein is a consumer demand. Incidence of *Salmonella* sp in ducks (19), cattle (20), broilers (21), fish (22). Pathogenic microorganisms in the food chain are transmitted to humans through a variety of foods including beef, poultry and eggs (23,24). Bacterial contamination of food can occur at all stages of production so that it can affect the quality of poultry products (25). Despite awareness of the risks of Salmonellosis from handling raw poultry, the public is generally unaware that *Salmonella* can also spread between live birds and humans (12). This emphasizes the need for a global initiative with a control and monitoring system to control antibiotic resistance in order to protect public health related to *Salmonella* spp. from poultry farms. This review article aims to describe the importance of *Salmonella* which grows from poultry farms in terms of public health.

OVERVIEW OF SALMONELLA

Salmonella was initially discovered and isolated by Theobald Smith in 1855 from pigs infected with Hog cholera or Classical Swine Fever (CSF). Dr. Daniel Elmer Salmon, an American pathologist with Smith, identified the bacterial strain. The nomenclature of Salmonella is still very controversial and growing. The Centers for Control and Prevention of Diseases (CDC) currently uses the World Health Organization (WHO) recommended name scheme of Salmonella (6.26). The Salmonella genus belongs to the family Enterobacteriaceae, with two species, *S. enterica* and *S. enterica*. (3,4) bongori. *S. Enterica* consists of six sub-species, namely I, S, written in Roman numerals. *enterica* subs. *enterica* subsp. *enterica*, II, p. ent. *enterica* subsp. *enterica* subsp. Petrus; IIIa, *S. enterica* subs. *enterica* subsp. Arizonae; 3.24, *S. enterica* subs. *enterica* subsp. Cryptody; IV, p. *enterica* subs. *enterica* subsp. The fuck; and VI, *S. enterica* subs. *enterica* subsp. *indica*. *indica*. *Enterica* subsp, salmonella subsp. *Enterica* (I) occurs primarily in mammals. In humans and warm blooded animals, about 99 per cent of salmonella infections. In comparison, Salmonella and S were the other five subspecies. Bongori are predominantly found in cold-blooded and environmentally friendly animals and seldom infect humans (6.27).

Salmonella spp. is a Gram-negative rod-shaped bacteria which is one of the most common infectious agents in the tropics, especially in areas with poor hygiene (23). The source of infection with *Salmonella* spp. Comes from human or animal feces or urine which contaminates drinking water and food so that it becomes a source of infection, besides fish, flies and dust can also act as intermediaries for salmonellosis (7,8,28).

Salmonella spp classification. Serotype dependent on 3 major antigens, i.e., somatic (O), capsule (K), and flagellum (H). Somatic antigen (O) is positioned outside the membrane of the bacterial cell and has stable heat to form the lipopolysaccharide (LPS) oligosaccharide portion of the bacterial cell. A unique salmonella serotype can express more than one O antigen. The thermally-labile H antigen is used to activate the immune response of the host and is found mainly in bacterial flagellas. Much of the spp. *Salmonella*. It has two different genes that flagellar encode. These bacteria can be diphasic (phase I and II), so they can release one protein at a time only. Immunologically responsible Phase I H antigen can be expressed in many serotypes, whereas phase II antigen does not have the same characteristics and is present in several other serotypes (9,29).

The K antigen surface is rarely found between most serotypes of *Salmonella* and heat sensitive polysaccharides mainly located on the surface of the bacterial capsule. Only Paratyphi C, Dublin and Typhi serotypes were found for the K antigen subtype virulence (VI). In literature, the term serovar, synonymous with serotype, is widely used. In general, the subspecies in the specific classification *Salmonella* serotype are omitted. Reading literature like S, for example. Typhi *enterica* subspecies Typhi is generally reduced to *Salmonella* ser. S, or S. Typhi. Typhi (26,50). Typhi. There were currently 2 500 serotypes, each of which has a somatic (O) antigen combination with flagellular antigenes H1 and H2. More than 50 percent of these serotypes are *S. S. enterica*. *enterica*, *enterica*. It accounts for the majority of human *Salmonella* infections (30,31).

SALMONELLOSIS

In humans, *Salmonella*, which is an infectiity, has three distinct infections: typhoid, paratyphoid and non-typhoid *Salmonella* (NTS). In human beings it is a disease. S is the cause of typhoid and paratyphus fever. S, and typhi. S. *Enterica* serovar Paratyphi, a fever characteristic and complications, including septicemia, immunological symptoms, leukopenia, and neurology. Typhoid and paratyphoid complications may cause death (32). In the reverse, S. *Murinum* typhimurum, S. *enteritidis*, salmonella *entica* serovar newport (Newport S.), and salmonella *entica* serovar Heidelberg (H.), cause gastro-enteritis-limited, non-typhoidal infections of *Salmonella*, such as nausea, vomiting, diarrhoea, and bacteremia. But not (2) lethal.

There can be no distinctive clinical signs of typhoid fever and paratyphoid fever, which renders 'enteric fever' a mixture of both. Also S, too. typhus and s. typhus. Paratyphi called typhoid *Salmonella* (5,6). Two forms of *Salmonella* typhoid are stored in humans. Bacteria are spread by food or water intake. Enteric fever is typically characterised by a period of incubation of a week or more accompanied by symptoms such as headache, stomach pain and oral (or constipation) diarrhoea (6,33). Aside from fever, myalgia, bradycardia, hepatomegaly, splenomegaly and chest and stomach rashes can be encountered in infected men (6,34). *Salmonella* strains other than S. typhi and S. paratyphi are often referred to as non-typhoid *Salmonella* (NTS) and the main reservoir is animals. NTS infection is characterized by gastroenteritis in which there is an inflammatory condition in the digestive tract accompanied by symptoms such as bloodless diarrhea, vomiting, nausea, headache, stomach cramps, and myalgia. Symptoms such as hepatomegaly and splenomegaly are rare in patients infected with NTS (6,35). Gastrointestinal complications from NTS infection such as cholecystitis, pancreatitis, and appendicitis, whereas terminal ileal perforation was not associated with NTS infection (35).

Chronic carriers are characterised as bacteria that are carried through the heat for more than one year following the acute *Salmonella* infection. Since people are the *Salmonella* typhoid source, S. S and typhoid. Paratyphoid can be transmitted to human beings through common routes of transmission, such as water consumption or food contaminated by carrier faeces (33). In addition, people as NTS carriers are rare at 0.1% concentrations, since animals are the main stockpile of NTS (35). NTS is a disease that is prevalent in the entire world and is self-restricted diseases. *Salmonella* infection is the most common cause of this disease. Enteric fever, by comparison, is highly morbid and mortal and is widespread particularly in underdeveloped countries (1) due to salmonella typhoid.

SALMONELLA TRANSMISSION FROM POULTRY

Salmonella's spread is very normal and persistent in dry environments, but it can last for up to several months in water. S. S. Serobar. *Enterica* has a complex host / reservoir that can cause both human and animal diseases (30). In animals that are sometimes considered "carriers," *Salmonella* can cause clinical or sub-clinical infection in asymptomatic animals. Previous studies have found that chickens can suffer from subclinical infection over 22 weeks (30,36). Transports in farm and climate, in which bacteria can constantly and routinely be excreted in faeces without clinical symptoms, are of great importance to the transmission of *Salmonella* (30,37).

Salmonella's mode of transmission can be horizontal or vertical. The transmission of bacteria from the parent to

the infant is vertical transmission. In *Salmonella* infection in poultry which is caused by serovar enteritidis with a particular preference for the chicken reproductive system, vertical transmission is of great concern. In this case it happens by transovarian infection when the mother bird has a systemic infection that results in ovary infection and egg production in the oviduct. Bacteria migrating from cloaca into reproductive organs (4) contribute to serovar enteritidis gaining access to eggs. Additional evidence indicates that *Salmonella* may be transferred in dairy cows vertically from the foetal site in the uterus (39). Horizontal transmission takes place through aerogens and/or fecooral transmission. *Salmonella* is clearly transmitted horizontally by fomite, polluted drinking water, polluted feed, dirty cages, no signs of infected animals and faeces of infected livestock (38, 40). (38).

Some of the investigations of Salmonellosis outbreaks apart from those related to contact with live poultry there are also indirect contact of infected or contaminated food vendors (28). Another example of an epidemic caused by indirect contact with live poultry is foodborne disease which originates from workers who are infected by direct contact with chickens from the farm (41). Animals are the main reservoir for transmission of NTS infection. Transmission of NTS infection to humans can occur through consumption of food or water contaminated with infected animals, as well as by direct contact with infected animals or consuming infected animals. The incidence of NTS around the world is high, bacteria can be found in the environment. It is this diversity of reservoirs that creates significant difficulties for public health authorities in infection control (42).

The risk of Salmonellosis in humans after contact with live birds is well reported through large outbreaks (12). Since the last report on May 20, 2020, 368 people have been infected with *Salmonella*. As of now as of June 23, 2020, a total of 465 people were infected with *Salmonella* in 42 US states (43). According to Loharikar *et al.*, (2012), there were 4 outbreaks of Salmonellosis in the United States with the number of laboratory confirmed cases of *Salmonella* infection in humans from four outbreaks associated with live poultry contact, by the United States in 2009. Outbreak 1: cases infected with the *Salmonella* montevideo strain, United States on January 20 - December 1, 2009 (n = 96). Outbreak 2: Cases infected with the *Salmonella* Thompson strain, United States on February 16 - July 11, 2009 (n = 26). Outbreak 3: cases infected with *Salmonella* typhimurium, United States on May 21 - August 14, 2009 (n = 36). Outbreak 4: cases infected with the *Salmonella* johannesburg type outbreak, United States in May 2009 (n = 7). The reports represent four human outbreaks of *Salmonella* infection associated with contact with live poultry during 2009. Poultry on farms are the main source of *Salmonella* spread, however birds often appear healthy despite *Salmonella* infection. This outbreak highlights the need to focus on strategic efforts to reduce and prevent salmonellosis in humans associated with contact with live birds. (44).

ANTIBIOTIC RESISTANCE

The treatment of infectious disease includes antibiotics and can improve the quality of life by reducing bacterial-related deaths. The selectivity of antibiotics against bacterial interference is able to reduce harm to patients while ensuring the target bacteria are eradicated maximally (45). In the veterinary sector, inaccurate antibiotic use can promote antibiotic resistance in different bacteria types (46, 47) including Gram-positive

bacteria (48, 49, 50, 51) and Gram-negative bacteria (52, 53, 54, 55). NTS infection does not normally need antibiotic therapy, but complications including meningitis and septicemia need antibiotic treatments such as ciprofloxacin, ceftriaxone and ampicillin (56). S-causing infections. S and typhi. Paratyphi usually have complications and need serious treatment with antibiotics such as cefixime, chloramphenicol, amoxicillin, trimethoprim / SMX, azithromycin, aztreonam, cefotaxime or ceftriaxone to avoid death (2,57). Paratyphs are usually complications and need serious treatment.

Over the years, animals have often been debated on the contribution of the cattle, which has been an important storage facility for antimicrobial resistance with public health impacts, but in particular some supporting evidence has been given that poultry farms cause human NTS disease (18). More than 3,000 people in America die every year due to antimicrobial resistance (58, 59), according to the CDC, per year more than 48 million cases of foodborne disease occur in the US where at least 70 per cent of the pathogens are immune with at least one antimicrobial. (58, 59). Antibiotics are used for the prevention, treatment and control of infectious diseases as drugs for people and animals. Excessive use of antibiotics can, however, cause antibiotic resistance. The role of cattle in emerging and propagating medicinally resistant antimicrobial bacteria and the proliferation of antimicrobial resistance is poorly understood among humans (60, 61). The development of antibiotic-resistant *Salmonella* primarily results from the use of antibiotics for feed-based animals to facilitate growth and antibiotics in veterinary medicine for the treatment of bacterial infections (62). This can establish an increased risk of the transmission, through direct contact and food intake of infected animals, of zoonotic diseases with the *Salmonella* MDR strain from animals to humans via contaminated animal feces' food or water (6, 63).

Antibiotic resistance of *Salmonella* spp. isolated from broiler chicken meat in Central Surabaya Traditional Market, showed 27 out of 30 positive samples contaminated with *Salmonella* spp. with the results of the sensitivity test to antibiotics, 0% resistant to the antibiotics meropenem and amikacin; 3.7% resistant to the antibiotic ampicillin sulbactam; 11.1% were resistant to ofloxacin and 44.4% were resistant to nalidixic acid (21). Addressing this challenge will require efforts from various sectors to successfully control the spread and emergence of AMR in the country. Actions should include active surveillance to monitor the emergence and spread of AMR. Infection prevention and control must also be optimized to limit further spread. Raising awareness is critical to limiting the inappropriate use of antibiotics, and antibiotic stewardship programs in hospitals, outpatients, and community pharmacies, should regulate ongoing use of antimicrobials (64).

CONTROL AND PREVENTION OF SALMONELLOSIS

Salmonellosis is a major concern in food safety. The European Union has enacted regulations since January 2006 covering control measures implemented throughout the poultry production chain, including production levels, biosecurity measures, and prohibiting the use of antibiotics as growth promoters (65). Poultry and poultry products are frequently associated with outbreaks of Salmonellosis and therefore, are generally recognized as a major source of disease spread (66). *Salmonella* prevention and control can be achieved by adopting the

principles of HACCP (Hazard Analysis Critical Control Point) (67).

Hygiene and biosecurity should be part of the overall management of the farm. These steps are very important in infection control. Incoming poultry must have a high health status and must be purchased from reliable suppliers that have quality-assured breeding and hatchery facilities. Furthermore, Salmonella can be transmitted in chicken farms through vehicles, workers, clothing, footwear, equipment, water, food, garbage, insects, rodents, wild birds, pets, equipment, and many other factors. To prevent the entry of Salmonella into the farm can be done by limiting people who enter the farm, wearing protective clothing, and wearing boots that have been disinfected. In addition, workers must know basic hygienic principles, such as keeping hands and feet clean. In planning the management of the whole farm, cleaning and disinfection must be carried out regularly. The success of disinfection of chicken farms needs to be tested by taking samples on floors, walls, drinking water, eating places, and the environment, it is hoped that public awareness of the dangers of antimicrobial resistant if an antibiotic use approach is used. (68, 69, 70).

Integrated surveillance with collaboration between human health, food safety and animal health and One Health approaches and contamination strategies including livestock, retail, catering and consumers to minimize contamination and reduce transmission of Salmonella. In addition, continuous monitoring of the level of Salmonella resistance globally is very important for clinicians to support the best treatment options for Salmonellosis, especially for patients receiving antibiotic therapy (71, 72).

CONCLUSION

Salmonella spp. has always been a major public health problem that occurs worldwide. The spread of Salmonella is very widespread and persistent in the environment, it increases the difficulty in reducing the spread of Salmonella spp. Salmonella spp. it can even cause death in humans and animals. Apart from this, the emergence of antibiotic resistance in Salmonella is a major challenge in terms of effective treatment for the Salmonella infection. Limiting the use of antibiotics in feed is an effective measure to stop the spread of antibiotic resistance in poultry production.

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