

Antioxidant and antimicrobial properties of five medicinal Libyan plants extracts

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ABSTRACT

Five Libyan medicinal plants *Thapsia garganica*, *Hammada scoparia*, *Euphorbia serrata*, *Hyoscyamus albus* and *Retama rateam* were selected to evaluate their biological activities. Their total phenolic and flavanoid contents were assessed. The antioxidant activity was estimated using 2, 2-diphenyl-1-picrylhydrazyl (DPPH) as free radical scavenger. Their crude extracts showed reducing potential proportional to their concentration. The correlation coefficient (R^2) between antioxidant activity and their total phenolics and flavanoids content is 0.77 and 0.98 respectively. Crude aqueous, methanolic as well as alkaloids extracts of the five plants were tested against a number of G+ve and G-ve sensitive resistant (e.g MRSA) bacteria beside some fungal species. The aqueous extracts displayed weak antibacterial activity whereas methanolic extracts were profoundly effective against both G+ve and G-ve bacteria. The extracts of *E. serrata* and *H. scoparia* were highly effective against *E. coli* in particular. The alkaloid-rich extracts of *H. albus* and *H. scoparia* induced remarkable bacteriostatic and fungistatic effects. The bioactive ingredients of *H. scoparia*, *E. serrata* and *R. rateam* extracts are shown to be potential sources of natural antioxidant and antimicrobial ingredients favoring their possible use in industrial pharmacology on large scale.

Keywords: Medicinal Plants; Flavonoids; Free Radical Scavenging Capacity; Antioxidant; Phenolics; Antibacterial; Antifungal

1. INTRODUCTION

Medicinal plants MP have been used in folk medicine in Libyan rural areas at relatively cheaper expenses than modern medicine. They have been widely used as diuretics, topical anti-inflammants, and haemostatics [1]. Plants generally produce several secondary metabolites like phe-

nols, flavonoids, quinones, tannins, alkaloids, saponins, and sterols which are important sources of biocides and many other pharmaceutical drugs [2-8]. Medicinal plants are important in pharmacological research and drug development [9]. The most important secondary plant metabolites are phenols and flavonoids [10,11], they have distinctive biological activity as natural antioxidants which exceed many other synthetic ones [12].

Antioxidants are used to preserve food quality mainly because they arrest oxidative deterioration of lipids [13, 14]. Moreover, the exploration of naturally occurring antimicrobials for food preservation receives increasing attention due to consumer awareness of natural food products and a growing concern of microbial resistance towards conventional preservatives [15]. These factors have inspired the widespread screening of new plant species for possible medicinal and antioxidant properties, while the isolation and characterization of diverse phytochemicals [16,17].

The relationship between oxidative stress and antioxidants is very often explained in a very simple manner. First, reactive oxygen species (ROS) are reacted together as one functional entity producing destruction compounds such as secondary lipid peroxidation products. However, there are many different ROS that have separate and essential roles in normal physiology and are required for a variety of normal processes. Toxic reactive oxygen (ROS) can be produced by many sources such as ultra violet radiation (UV) and heat from sunlight. These species are substantially reactive and interact with a number of cellular molecules and metabolites thereby leading to a number of destructive processes causing cell damage and neurodegenerative diseases [18]. The aim of this study was to evaluate *in vitro* antioxidant as well as the antibacterial and antifungal properties of crude methanolic and alkaloid extracts of some Libyan medicinal plants.

2. MATERIALS AND METHODS

2.1. Plant Collection and Materials

Shade-dried leaves of *Euphorbia serrata*, *Retama rae-*

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Essentials of Medicinal and Aromatic Crops Muhammad Zia-Ul-Haq, Arwa Abdulkreem AL-Huqail, Muhammad Riaz, Umar Farooq Gohar, 2023-10-09 Medicinal and aromatic crops MACs are high value crops since the natural products obtained from them are low volume high value commodities that have numerous applications in various sectors such as the food beverage food supplement flavor and fragrance perfumery and cosmetics pharmaceutical and aromatherapy industries In addition the plant biomass is used in the production of teas and medical applications in traditional and also modern medicines MACs are important mainly because they contain plant secondary metabolites such as essential oils alkaloids glycosides saponins tannins vitamins and other bioactives Plant secondary metabolites are differentiated from plant primary metabolites of photosynthesis and respiration since they are directly involved in growth and development of plants Some MACs are used as spices and culinary herbs since they contain mainly essential oils and are used as tonic to the digestive system appetite modification and other systems and may facilitate nutrient uptake and utilization from various foods A significant amount of MACs and their natural products have also demonstrated antimicrobial antifungal and bactericidal activity and significant antioxidant capacity In the past MACs and their natural products have been used as a source for various medicines in food and beverage production and in aroma products Essentials of Medicinal and Aromatic Crops summarizes the current knowledge on medicinal and aromatic crops including the agronomical practices of important MACs and their products their beneficial effects and utilization of MAP and their products The chapters provide a comprehensive guide to the most important and used medicinal and aromatic crops and their use in functional foods nutraceuticals and as bioactives against various ailments providing researchers teachers chemists food scientists agronomists and agroecologists in academia industry and government a fully up to date singular source on this important topic **Plants as a Source of Natural**

Antioxidants Nawal Kishore Dubey, 2014-12-18 A comprehensive overview of both traditional and current knowledge on the health effects of plant based antioxidants this book reviews medicinal and aromatic plants from around the world It covers the different sources of antioxidants including essential oils algae and marine microorganisms as well as the role of abiotic and biotic stresses endophytes transgenic approaches in scavenging ROS and antioxidant plants used in different therapeutic systems INNOVATIVE NATUROPATHY COW URINE AND HERBAL EXTRACTS: A TRAILBLAZER REMEDY Dr. (Mrs.)

Farida P. Minocheherhomji, **Antibacterial Drug Discovery to Combat MDR** Iqbal Ahmad, Shamim Ahmad, Kendra P. Rumbaugh, 2019-11-09 This book compiles the latest information in the field of antibacterial discovery especially with regard to the looming threat of multi drug resistance The respective chapters highlight the discovery of new antibacterial and anti infective compounds derived from microbes plants and other natural sources The potential applications of nanotechnology to the fields of antibacterial discovery and drug delivery are also discussed and one section of the book is dedicated to the use of computational tools and metagenomics in antibiotic drug discovery Techniques for efficient drug delivery are also covered

The book provides a comprehensive overview of the progress made in both antibacterial discovery and delivery making it a valuable resource for academic researchers as well as those working in the pharmaceutical industry *Medicinal Roots and Tubers for Pharmaceutical and Commercial Applications* Rakesh Kumar Bachheti, Archana Bachheti, 2023-11-03 The root and tuber are vital parts of medicinal plants providing mechanical support producing critical growth regulators and storing food Bioactive compounds obtained from plant roots and tubers demonstrate health benefits presenting antioxidative antimicrobial hypoglycaemic hypocholesterolaemic and immunomodulatory properties Roots of many medicinal plants have been used for the treatment of disease and formulation of drugs and they are also known for their commercial value being used as an ingredient in the pharmaceutical and cosmetic industries *Medicinal Roots and Tubers for Pharmaceutical and Commercial Applications* provides information on the medicinal properties of roots and tubers and various phytochemicals derived from them Features Presents exhaustive information on plant roots and tubers including *Glycyrrhiza glabra* *Curcuma longa* *Beta vulgaris* *Zingiber officinale* *Boesenbergia pandurata* *Houttuynia cordata* *Eutrema japonicum* and *Withania somnifera* Explains the roles of secondary metabolites isolated from roots and tubers and features information on their pharmaceutical and commercial applications Discusses opportunities for future prospects of different roots and tubers for their industrial applications A volume in the *Exploring Medicinal Plants* series this book provides information on phytochemicals derived from medicinal plant roots and tubers This is valuable information for scientists researchers and students working on medicinal plants economic botany chemistry biotechnology pharmaceuticals and many other interdisciplinary subjects

ABSTRACT BOOK of I. INTERNATIONAL CONGRESS ON MEDICINAL AND AROMATIC PLANTS, Dear Academicians Readers and Educators We are pleased to present the issue of the *International Journal of Secondary Metabolite* as a special issue entitled *I International Congress on Medicinal and Aromatic Plants Natural And Healthy Life* This special issue contains some of scientific studies presented in the congress Hosting the *I International Medical and Aromatic Plant Congress* held in Konya on 9-12 May 2017 by the cooperation T R Ministry of Forestry and Water Affairs General Directorate of Forestry and Necmettin Erbakan University was a great honor for us The total number of abstract submission for the congress was 1923 After the scientific evaluation 85 abstracts were rejected and 244 abstracts were withdrawn As a result a total of 1594 abstracts were accepted for presentation 280 of them as oral presentation and 1314 as poster presentation 2604 authors were contributed and 1543 participants were participated to the congress The studies presented in the congress was electronically shared in terms of accessibility The authors of 220 papers presented in the congress submitted to the *International Journal of Secondary Metabolite* for publication 70 of them were published and 150 full papers were rejected due to revision deadline reviewing process etc after reviewing process I would like to special thank to the Journal founder for publishing and also to the editor editorial board and authors for contributing this issue Best regards Dr Muzaffer EKER Rector of Necmettin Erbakan University TC Orman ve Su leri Bakanl Orman Genel M d r l ve

Necmettin Erbakan niversitesi payda l nda Necmettin Erbakan niversitesi ev sahipli inde 9 12 May s 2017 tarihlerinde Konya da ger ekle tirilen I Uluslararası T bbi ve Aromatik Bitkiler Kongresi nin a l program Orman ve Su leri Bakan Say n Prof Dr Veysel Ero lu Sa l k Bakan Prof Dr Recep Akda Milletvekilleri Konya Valisi Yakup Canbolat Konya B y k ehir Belediye Ba kan Tahir Aky rek Afyon Kocatepe niversitesi Rekt r Prof Dr Mustafa Solak Necmettin Erbakan niversitesi Rekt r Prof Dr Muzaffer eker Orman Genel M d r Dekanlar Akademisyenler Daire Ba kanlar renciler ve sekt rde faaliyet g steren i adamlar n n kat l m yla ger ekle tirilmi tir Kongre son y llarda yap lan en geni kat l ml bilimsel organizasyon olma zelli i ta maktad r Kongreye t bbi ve aromatik bitkilerin dahil oldu u pek ok alandan tan nm ve se kin akademisyenler kat lm t r Davetli Konu mac olarak kongreye kat lan Mauritius niversitesi nden Vidushi Neergheen Bhujun Handong Global niversitesi nden Jong Bae Kim Malezya dan ve Ege niversitesi nden emekli Prof Dr M nir zt rk Yeditepe niversitesi nden Prof Dr Erdem Ye ilada Sebahattin Zaim niversitesi nden Prof Dr Adem ELG N T B TAK Marmara Ara t rma Merkezi nden Prof Dr Cesarettin Ala alvar Hacettepe niversitesi nden Prof Dr rem Tatl ankaya ve Cumhurba kan ba dan man Prof Dr brahim Adnan Sara o lu bunlar aras nda say labilir Kongrede g n boyunca yedi ayr salonda a a daki ba l klar alt nda s zl ve poster bildiriler sunulmu ve yo un kat l m g zlenmi tir T bbi Bitki Aromatik Bitki ve Mantar retimi T bbi ve Aromatik Bitkisel r n Sanayii Fonksiyonel G dalar Bitkisel aylar ve Nutras tikler Tabii Kozmetik r nler Aromatik Bitkiler ve U ucu Ya lar Farmakoloji Farmakognozi Toksikoloji Farmakovijilans Tabii Bitki rt s n n Korunmas ve Etnobotanik T bbi ve Aromatik Bitkilerde Antropoloji Sosyo Ekonomi K lt r ve Etik T bbi ve Aromatik Bitkilerin Ak lc Kullan m Kongrede s zl sunular Lokman Hekim Farabi bn i Sina Ak emsettin Mevl na ve Balo Salonlar nda poster sunular ise Poster Salonunda ger ekle tirilmi tir Kongre s resince Selva Redoks Tales Analitik Dr Mustafa M cahit Y lmaz Sem Yap lcan Biosan firmalar ile Orman Su leri Bakanl Konya B y k ehir Belediyesi Park ve Bah eler Daire Ba kanl NE G da M hendisli i B l m NE Sa l k Bilimleri Fak ltesine ait stantlarda t bbi ve aromatik bitkilerle ilgili r n ve yay n tan t mlar ger ekle tirilmi tir Orman Genel M d rl kongreye d ll foto raflar sergisi ile renk katm t r Kongremizin d zenlenmesinde 12 Y r tme Kurulu 24 yerli 25 yabanc olmak zere 49 Bilim Kurulu ve 11 Dan ma Kurulu yesi g rev yapm t r Kongremize toplam 1543 kat l mc ba vurmu olup kat l mc lar i erisinde 520 retim eleman 483 retim yesi 429 renci ve 111 sekt r temsilcisi dinleyici yer alm t r Kongremize 524 bay kat l mc 1019 bayan kat l mc ba vurmu tur Kongreye bildiri g nderen 2604 yazardan 382 adeti ziraat 321 adeti g da 311 adeti orman 270 adeti m hendislik 225 adeti sa l k 161 adeti diyetisyenlik 157 adeti veterinerlik 145 adeti farmakoloji 104 adeti eczac l k 37 adeti di hekimli i ve 491 adeti kozmetik peyzaj sosyal k lt rel vb di er alanlarda al t belirlenmi tir Kongreye toplam bildiri ba vurusu 1923 adet olup bilimsel de erlendirme sonucu 85 adet reddedilmi 244 adet bildiri geri ekilmi tir Sonu olarak 280 bildiri s zl bildiri olarak ve 1314 bildiri poster bildiri olmak zere toplam 1594 bildiri kabul edilmi tir S zl bildiriler konular na uygun olarak 48 oturumda poster bildiriler ise 14 oturumda sunulmu lard r Bu bildiriler i erisinde yazarlar taraf ndan bildiri kitab nda bas lmak zere 159 tam metin g nderimi ger ekle tirilmi ayn zamanda uluslararası alan indeksli International Journal of Secondary Metabolite dergisine de 173 tam metin

makale g nderilmi olup toplam 332 adet tam metin haz rlanm t r Kongre web sayfam za 45 bin tekil ziyaret i girmi ve 4 milyondan fazla hit olu turmu lard r Kongre duyurular ve hat rlatmalar i in 150 binden fazla mail g nderilmi olup yakla k 15 bin mail al nm t r Kongre ile ilgili sekretarya zerinden yakla k 6000 g r me yap lm t r Yukarda ifade edilen konferans bildiri oturumlar ve toplant larda t bbi ve aromatik bitkiler sekt r nde ortaya kan reform ihtiya lar mevzuat ula m ve kalite sorunlar vb konular tart lm t r Ortaya kan sonu lar kongre d zenleme kurulu taraf ndan sonu bildirgesi haline getirilmi tir Sonu Bildirgesi ile tam metin kongre kitab e kongre kitap olarak kongre payda lar na ait web siteleri ile kongre web sitesinden www.tabkon.org kamuoyu ile payla lacakt r SONU ve DE ERLEND RME RAPORU Kongre de erlendirme oturumu soru cevap k sm ndan elde edilen sonu lar ile de erlendirmelerini g nderen bilim insanlar n g r leri a a da yer ald gibi zetlenebilir 1 Bitkisel r nlerin sa l k zerine olumlu etkilerinin oldu u bilinmektedir Ancak bu r nlerin yanl kullan m nedeniyle karaci er nakline kadar gidebilen hayati ve ciddi sa l k sorunlar na yol a abildi i g r lmektedir Sekt r n ve vatanda n sorunlar na y nelik z m retmek amac yla Bakanl klar Orman ve Su leri Bakanl Sa l k Bakanl G da Tar m ve Hayvanc l k Bakanl ve G mr k ve Ticaret Bakanl aras nda bir TIBB VE AROMAT K B TK LER KOORD NASYON ST KURULU olu turulmal d r 2 B lgemizin t bbi ve aromatik bitkiler sekt r nde ilk olarak b lgelere g re t bbi aromatik bitki retim planlama al malar yap lmal d r B lgelere g re ekonomik de eri ve retim potansiyeli y ksek bir veya birka bitki t r belirlenmelidir Bu bitki t r n n do adan toplama ve k lt re al narak retilebilecek t rleri ayr ayr belirlenmelidir Gerekli r n n belirlenmesi retim planlamas ve fiyatland rma al malar n yapmak i in yerelden STK kamu ve zel sekt r uzmanlar n n yer ald farkl disiplinlerden m te ekkil bir komite kurulmal d r Bu belirlenen bitkilerin gerek toplanmas gerekse k lt re al narak retilmesi i in gerekli organizasyonlar ve destekler sa lanmal d r 3 lkemiz ok zengin do as na ra men hala i lenmemi bir bitki ihracat s olmaya devam etmektedir lkemizde bitkisel ila sanayinin geli memesi bunun yan nda parf meride kullan lan sentetik r nlerin daha ucuz olmas gibi nedenlerle do al u ucu ya lar n ikinci planda kalmas t bbi ve aromatik bitkilerin retim olanaklar n k s tlam t r 6 4 T bbi ve aromatik bitkilerin mevcut durumunu korumak ve artan pazarda yer almas n sa lamak i in piyasan n istedi i r nleri istedi i miktar ve kalitede sunmam z nem arz etmektedir Do al zenginliklerimizin s reklili i ve gelecekteki ara t rmalar i in gen kaynaklar n n korunmas insitu ve ex situ nemlidir Ancak t bbi ve aromatik bitki retimini do adan toplayarak kar lamam z m mk n de ildir Yeterli miktarda standart ve kaliteli r n retmek i in bu bitkilerin k lt re al nmas ve slah nem arz etmektedir T bbi aromatik bitkilerde lkemiz endemik bitkilerinin isimlendirilmesinde terminoloji birlikteli i ve b lgesel co rafi farkl l klar tan mlay c temel bilgilerin netle tirilmesi gerekmektedir Ayr ca lkemiz floras na uygun e it slah na y nelik proje al malar yapt r lmas gerekmektedir k lt re alma adaptasyon slah vb 5 T bbi ve aromatik bitkilere ait d zenli istatistiksel veriler bulunmamaktad r Bu arz talep ili kisi dikkate al narak retim yapmay zorla t rmaktad r Bu nedenle bitkilerle ilgili bilgilerin toplanaca ve ula labilece i veri bankalar olu turulmal d r Yurt i i ve yurt d nda ticareti yap lan do al bitkilerin tam bir listesi toplay c arac ihra eden firma ve ilgili devlet kurumlar yla birlikte haz rlanmal ve bir veri taban olu turulmal d r T bbi ve aromatik bitkilerin do adan toplanmalar kontrol

alt na al nmal nesli tehlikede olanlar koruma alt na al nmal ncelikle tar m na ge ilmeli t m bu bilgiler olu turulacak veri taban nda yer almal d r 6 En ok ihracat yap lanlar d ndaki bitkisel r nler ihracat istatistiklerinde di erleri fasl nda yer almaktad r Bu y zden lkemizden ihra edilen droglar n tam bir listesine ula abilmek m mk n olmamaktad r Bu bitkiler zerinde sa l kl al malar yap labilmesi i in bunlar n ticaretlerinin izlenmesi ihracat ve zellikle retim miktarlar n n ve bunlar n ne kadar n n do adan toplama ve ne kadar n n da tarla retiminden geldi inin istatistiklerde a k ve net olarak yer almas zorunlulu u bulunmaktad r 7 T ketici ve sanayici taleplerine cevap veren kaliteli ve standart r n i in slah edilm e itlerin geli tirilmesi uygun ekolojik ko ullar n belirlenmesi do al bitkilerin do aya zarar vermeden zaman nda toplanmas hasat sonras i lemler ve i leme teknolojisinin belirlenmesi t bbi ve aromatik bitkilerde retim ve pazar olanaklar n artt racakt r B lgelere g re birka r nde z t ve etken madde retimine ge ilmesi retilen r nler i in markala ma ve standart olu turma 7 faaliyetlerinin y r t lmesi elzemdir Ayr ca ham madde retimini ikincil r nlere d n t recek tar ma dayal sanayi tesislerinin b lgeye kazand r lmas olduk a nemlidir 8 G da Tar m ve Hayvanc l k l m d rl klerinin fide ve tohum da t lmas noktas nda il zel idaresiyle birlikte projeler yapmas n n ok etkili olacakt r 9 T bbi ve aromatik bitkiler alan nda faaliyet g steren retici toplay c ihracat sanayici ara t rmac ve di er t m payda lar n koordinasyonunu sa layacak bir sistem ve ara t rma sonu lar n n prati e aktar lmas i in ara t r c sanayici retici aras nda bilgi ak n sa layacak yay n sistemi olu turulmal d r 10 Genetik kaynaklar kullan larak tar ma ve lke ekonomisine endemik vb ekonomik de eri olan bitkiler kazand r lmal d r Genetik materyal tohumluk fide yetersizli ini gidermek i in al malar yap lmal d r 11 Ta i yabanc madde kar t rma problemine kar standardizasyon sa lanmal d r 12 Aktar d kkan a mak i in T bbi ve Aromatik B l m mezunu olma art getirilmelidir 13 ki y ll k olan e itim s resi yetersizdir Avrupa lkelerindeki gibi Medikal Herbalist lik ekinde uygulamal en az y ll k e itim verilmelidir 14 Hali haz rdaki m fredat g zden ge irilerek bu konudaki s z sahibi lkelerdeki gibi e itim verilmelidir Okullar aras nda m fredat birli i sa lanmal d r E itimcilerin bu konuda yetkinli i art ko ulmal d r Meslek gereklerine uygun donan ml mezunlar n yeti ebilmesi i in e itime uygun altyap sa lanmal d r 15 Bu b l m mezunlar na yeterli e itim verilerek herbalist nvan verilebilir Ve yasalarca da tan nabilir Mevcut unvan olan T bbi ve Aromatik Bitkiler Teknikeri uzun bir unvan oldu undan daha ak lda kal c bir unvan i in d zenleme yap lmal d r 16 Baharat bitkisel g da takviyesi do al kozmetik bitki ay bitkisel ila reten i yerleri ile bu t r r nlerin sat n n yap ld eczane aktar organik r n d kk nlar nda b l m mezunlar n n al t r lmas zorunlulu u yasalarca dikkate al nmal d r 17 Bilimsel ara t rma sonu lar n n prati e aktar lmas noktas nda al malar n yap lmas gerekmektedir Elde edilen sonu lar n ulusal ve uluslararası l de katk yapmas beklenmektedir 18 lkemizde bitkisel ila sanayinin geli mesine y nelik al malara destek verilmelidir 8 19 Uluslararası ticarete nem ta yan t rlerin retimi ve ihracat n n artt r lmas gerekmektedir 20 Pazar garantili bah e tarla uygulamalar na y nelik al malar ile markala maya y nelik al malar yap lmal d r Ayr ca stratejik de eri olan r nlerin retimine gidilmelidir 21 Herhangi bir zaman diliminde pop ler olan t r ya da r n zerine yo unla mak yerine her d nem nemini kaybetmeyen t rlere nem verilmelidir 22 T bbi ve aromatik bitkilerin tar m i in orman arazileri yerine tar msal alanlar n ayr lmas gereklidir 23 T bbi ve aromatik bitki analizi ile

ilgili yetkin laboratuvarlar aracılığıyla kriterler belirlenmeli bile enlerin içeriği ve miktar ve yapılacak almalarda bu standartlar baz alınmalıdır 24 Bitkilerin doğru tanımlanmaması nemli bir hata olarak karşımıza çıkmaktadır Bu konuda yetkinliği olan kişilerle ortak alınmalıdır 25 Retim teknolojileri ile ilgili almak yapmak isteyen yatırımcılara gerekli eğitimler bakanlık vb kurumların desteğiyle verilmelidir 26 Fitoterapi konusunda Sağlık Bakanlığının desteği gereklidir 27 Gıda takviyesi olarak satılanların ruhsatlandırılması Sağlık Bakanlık tarafından yapılmalıdır 28 Bilimsel almalara konu olan bitkiler aktar veya pazardan temin edilmemeli doğa ortam veya kilit ortamından alınmalıdır Bu tür bildirimler bilimsel kongrede kabul edilmemelidir 29 Tbbi ve aromatik bitkilerin retimi esnasında zirai mücadelede ruhsatlı pestisit retimi yerine almalarda yapılacak 30 Kongre esnasında posterlerin okunabilmesi için daha uzun süre asılmakla kalmalı olarak bu amaçla da olarak posterler elektronik ortamda yayımlanmalıdır 31 Kongrede kullanılabilecek Türkçe ve İngilizce olması önem arz etmektedir 32 Etnobotanikte 70 farklı bitkiye kekik adı veriliyor Bunu giderecek almalarda yapılacak 33 Sarve karmin z kantaronun etki mekanizmaları farklı olması nedeniyle bu bitkiler karşı olarak hataen birbirinin yerine kullanılabilmektedir Bu yüzden bazı ilaç problemleri yaşanabilmektedir Bu ve benzeri durumların giderilmesi için gerekli almalarda yapılacak 34 Lavanta vb endemik bitkilerin ülke ekonomisine kazandırılması için almalarda yapılacak 35 Tbbi ve aromatik bitkiler yerine farklı bilim disiplinlerinin birlikteliğinde yarıteci multidisipliner almalarda ve toplantılarının sayısal artırılmasıdır Fakat bu toplantılar belli bir koordinasyon içinde yürütülmelidir Benzer tarzda fazla sayıda yakın tarihli ve etkili toplantılar düzenlenmektedir 36 Tbbi ve aromatik bitkilerle ilgili kongrelerin mutlak olarak ulusal ve uluslararası bazda düzenlenmesi gerekir Bunun için 2 yılda bir ulusal 4 yılda bir uluslararası kongre düzenlenmesine karar verilmelidir Gerçekleştirilecek kongrelerden kaçak sonu ve neriler akademik ekonomik ve retim için faydalı model yeni teknolojiler kollarının olması için azami zaman ve gayretin gösterilmesi büyük önem haizdir 37 Bir sonraki Ulusal Tbbi ve Aromatik Bitkiler Kongresi için Afyon Kocatepe Üniversitesi evsahipliğinde 2018 2019 eğitim retim döneminde Afyon'da yapılmasına karar verilmelidir Kongre sonuçlarının ülkemize bilim insanlarına reticilere sanayicilere ve bütün insanlara olumlu katkı yapması dileğiyle 16 05 2017 Konya

Natural Feed Additives Used in the Poultry Industry Mahmoud Alagawany, Mohamed E. Abd El-Hack, 2020-12-31 Natural Feed Additives Used in the Poultry Industry addresses recent information on the use of different natural feed additives in poultry nutrition Chapters in the book focus on the growth production reproduction and health of poultry Key Features 15 chapters contributed by more than 30 experts and scientists involved in animal and poultry nutrition physiology toxicology pharmacology and pathology Chapters highlight the significance of a variety of herbal plant extracts and derivatives cold pressed and essential oils fruits by products immunomodulators organic acids probiotics nanoparticles and their role in poultry industry instead of the growth promoter antibiotics Provides details about the use of antibiotic as growth promoters in poultry and the development of bacterial resistance Provides a holistic approach on how natural feed additives can provide an efficient solution to animal health Covers the main categories of poultry including broiler chickens laying hens quails geese ducks and turkey References in

each chapter for further reading This handbook represents an up to date review of the existing knowledge on natural feed additives both in vitro and in vivo and the basis for future research The text is useful to students of poultry sciences nutritionists scientists veterinarians pharmacologists poultry breeders and animal husbandry extension workers

Therapeutic Medicinal Plants Marta C.T. Duarte, Mahendra Rai, 2015-11-16 Medicinal plants have been used in the prevention diagnosis and elimination of diseases based on the practical experience of thousands of years There is a pressing need to initiate and transform laboratory research into fruitful formulations leading to the development of newer products for the cure of diseases such as AIDS cancer and hepatitis Icelandic Herbs and Their Medicinal Uses Anna Rosa

Robertsdottir, 2016-03-01 This beautifully illustrated full color guide provides everything readers need to know about the medicinal powers of 90 native herbs of Iceland 85 of which also grow in North America Anna Rosa Robertsdottir describes the history uses harvesting drying and storage of the plants and includes a wealth of detailed instructions for their preparation including infusions decoctions tinctures and syrups Generous color photographs of both the leaves and flowers facilitate plant identification allowing both amateur and professional herbalists to use the guide to full advantage User friendly layout meticulous research a wealth of detailed information and an extensive bibliography make this an essential one of a kind reference for anyone interested in the subject For each herb sidebars describe Habitat Parts used Harvesting Constituents History Action Uses Research Dosage *Abstract book International Congress on health Science and Medical Technologies 2024* Abdeldjalil KHELASSI, 2024-12-02 International Congress on Health Sciences and Medical Technologies

2024 ICHSMT 24 is the 8th edition following several editions held online in 2021 and 2023 adding to in person Tlemcen Algeria 2016 2017 2019 and 2022 and Algiers Algeria 2018 It is an annual congress containing several conferences and workshops focusing on Medical technologies and health sciences The congress attracted researchers from several nations and specialties as Algeria Germany Iran Switzerland Netherland Denmark Malaysia Pakistan France Tunisia Morocco Brazil Egypt India Iraq and Benin The congress author s affiliations were from several departments such as medicine biology physics and chemical sciences computer sciences veterinary agronomy environment pharmacy dental Medicine electronic and mechanical engineering and mathematics The content was selected via strong criteria applied by the members of the program committee We received 127 submissions which were reviewed by 15 reviewers and scanned by iThenticate software We have accepted 91 abstracts presented in this book the rate of acceptance was 71.75% Biological Potential and Medical Use of Secondary Metabolites Ana M. L. Seca, Diana Cláudia Pinto, 2019-07-26 Many macro and micro species from terrestrial and aquatic environments produce structurally unique compounds and in many countries still are the primary sources of medicines In fact secondary metabolites are an important source of chemotherapeutic agents but are also lead compounds for synthetic modification and the optimization of biological activity Therefore the exploitation of secondary metabolites or their inspired synthetic compounds offers excellent opportunities for the pharmaceutical industry This

Medicines Special Issue focuses on the great potential of secondary metabolites for therapeutic application The Special Issue contains 16 articles reporting relevant experimental results and an overview of bioactive secondary metabolites their biological effects and new methodologies that improve and accelerate the process of obtaining lead compounds with regard to new drug development We would like to thank all 83 authors from all over the world for their valuable contributions to this Special Issue

Ethnopharmacology and Biodiversity of Medicinal Plants Jayanta Kumar Patra, Gitishree Das, Sanjeet Kumar, Hrudayanath Thatoi, 2019-08-05 Ethnopharmacology and Biodiversity of Medicinal Plants provides a multitude of contemporary views on the diversity of medicinal plants discussing both their traditional uses and therapeutic claims This book emphasizes the importance of cataloging ethnomedical information as well as examining and preserving the diversity of traditional medicines It also discusses the challenges present with limited access to modern medicine and the ways in which research can be conducted to enhance these modern practices The book also explores the conservation procedures for endangered plant species and discusses their relevance to ethnopharmacology Each chapter of this book relays the research of experts in the field who conducted research in diverse landscapes of India providing a detailed account of the basic and applied approaches of ethnobotany and ethnopharmacology The book reviews multiple processes pertaining to medicinal plants such as collecting the traditional therapeutic values and validation methods It also explores developments in the field such as the diversity and medicinal potential of unexplored plant species and applications in drug formulation to fight against anti microbial resistance AMR

Heilpflanzenpraxis heute, Rezepturen und Anwendung, 2 Siegfried Bäumler, 2013

Nanotechnology in Herbal Medicine Sabu Thomas, Adebola Omowunmi Oyedeji, Oluwatobi Samuel Oluwafemi, Rose Jaquelin PJ, 2023-07-13 Nanotechnology in Herbal Medicine Applications and Innovations details how nanomaterials can be utilized to improve the therapeutic mechanisms and key properties of herbal drugs This book guides the reader through the preparation properties applications benefits and challenges of herbal nanoformulations helping them solve fundamental and applied problems in the area of novel herbal medicines and drug delivery systems Herbal drugs play a large role in traditional medicines which are actively used by many cultures across the globe for the treatment of various illnesses and injuries Despite their widespread use herbal medicines may lead to possible health risks due to the lack of information on the chemical composition and permitted dosage Covers a range of nanomaterial types for use in herbal medicine including polymeric metallic carbon based and magnetic nanoparticles as well as dendrimers liposomes nanogels and more Explores the variety of biomedical applications for herbal nanoformulations such as in cancer therapy cardiovascular disease and wound healing Weighs up the advantages and disadvantages of using nanotechnology in herbal medicine with a focus on toxicological impact

Die Seele braucht keine Pillen Kelly Brogan, 2020-10-12 Nebenwirkungsfrei und selbstbestimmt die Seele heilen Psychiaterin Dr Kelly Brogan stellt eine provokante These auf In einer kranken Welt ist nicht der gestört der unter Angst Depressionen oder Burn out leidet sondern die Gesellschaft die Unmenschliches von ihren Mitgliedern verlangt

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Phytochemistry and Pharmacology of Medicinal Plants, 2-volume set T. Pullaiah, 2023-08-07 This 2 volume book set Phytochemistry and Pharmacology of Medicinal Plants introduces and provides extensive coverage of 79 important medicinal plant species Each chapter written by noted experts in the field focuses on one important medicinal plant giving a brief introduction about the species and then delving into the plant s bioactive phytochemicals along with its chemical structures and pharmacological activities A wide array of biological activities and potential health benefits of the medicinal plant which includes antiviral antimicrobial antioxidant anti cancer anti inflammatory and antidiabetic properties as well as protective effects on liver kidney heart and nervous system are given An extensive collection of research literature on pharmacological activities on that species is reviewed This volume published under the AAP Focus on Medicinal Plants book series edited by the accomplished editor T Pullaiah who has taught researched written and published on medicinal plants for over 35 years will be an important reference resource for years to come for both new and experienced medicinal researchers

Mushrooms with Therapeutic Potentials Dinesh Chandra Agrawal, Muralikrishnan Dhanasekaran, 2023-04-24 The book presents new and novel perceptions about ailments alleviating the effects of several mushroom species Also the book highlights the curative role of medicinal mushrooms on some peripheral and central diseases Various chapters in the book primarily reviews have been dedicated to providing the therapeutic efficacy of mushrooms against respiratory illnesses gut microbiota COVID 19 dementia epilepsy mental ailments cancers cardiovascular kidney related diseases and other common pathologies Thus medicinal mushrooms are current and future consumable healthcare products that usually exhibit nourishing properties and possess prophylactic and therapeutic values with minimal adverse effects and contraindications The book focuses on Sustainable Development Goal SDG 3 to promote healthy lives and well being for all Medical pharmacy nursing and CAM complementary and alternative medicine students practitioners scholars researchers other healthcare professionals and general readers are this book s potential audience The book can be adopted as a textbook for undergraduate and graduate courses so that the therapeutic potential of mushrooms can reach a wider audience This book strives to create a new resource for the future use of medicinal mushrooms in various disorders

Essential Oils Hany El-Shemy, 2020-01-08 Essential oils were used globally as a folk medicine for the treatment of a number of diseases because of the high content of natural compounds Therefore this book looks at

research topics dealing with isolation purification and identification of active ingredients of essential oils from plants This knowledge will provide significant information about essential oils to researchers and others interested in the field

Medicinal Plants and Foods Gema Nieto,2020-11-20 Medicinal plants or medicinal herbs have been identified and used since ancient times to improve the sensory characteristics of food The main compounds found in plants correspond to four major biochemical classes Polyphenols terpenes glycosides and alkaloids Plants synthesize these compounds for a variety of purposes including protection of the plant against fungi and bacteria defense against insects and attraction of pollinators and dispersal agents to favor the dispersion of seeds and pollens

Phytochemicals in Goji Berries Xingqian Ye,Yueming Jiang,2020-06-04 Goji berries *Lycium barbarum* which are widely distributed in Northwestern China Southeastern Europe and the Mediterranean areas have traditionally been employed in Chinese medicine from ancient times Goji berries also known as wolfberry have become increasingly popular in the Western world because of their nutritional properties often advertised as a superfood in Europe and North America With the development of analysis methods various chemical constituents have been identified including carbohydrates carotenoids flavonoids betaine cerebroside sitosterol amino acids trace elements vitamins and other constituents Polysaccharides have been identified as one of the major active ingredients responsible for biological activities

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