



WG3: European traditions of the use of medicinal plants to control animal diseases.

Leader and Coleaders positions:

Alvaro Fdez-Blanco B. (University of Seville)

Liliana Vargas-Murga (University of Girona)

Ivona Foitová (University of Masaryk)

Pierre Champy (University Paris-Saclay)



OBJECTIVES:



- Develop standardized criteria for the term “traditional” for HVMP.
- Create basic requirements for future ethnoveterinary studies.



Veterinary Phytotherapy



History veterinary Medicines:
Spain study case

The background is a light beige color with a subtle, fine-grained texture. It is decorated with stylized elements: a branch with leaves in the top-left corner, a branch with leaves in the bottom-right corner, a large orange watercolor wash in the bottom-left corner, and a green-to-yellow watercolor wash in the top-right corner.

03 | Selfmedication

Selfmedication

03 | Selfmedication

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DOI:10.1079/PNS2003257

Animal self-medication and ethno-medicine: exploration and exploitation of the medicinal properties of plants

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Early in the co-evolution of plant–animal relationships, some arthropod species began to utilize the chemical defences of plants to protect themselves from their own predators and parasites. It is likely, therefore, that the origins of herbal medicine have their roots deep within the animal kingdom. From prehistoric times man has looked to wild and domestic animals for sources of herbal remedies. Both folklore and living examples provide accounts of how medicinal plants were obtained by observing the behaviour of animals. Animals too learn about the details of self-medication by watching each other. To date, perhaps the most striking scientific studies of animal self-medication have been made on the African great apes. The great ape diet is often rich in plants containing secondary compounds of non-nutritional, sometimes toxic, value that suggest medicinal benefit from their ingestion. Chimpanzees (*Pan troglodytes*), bonobos (*Pan paniscus*) and gorillas (*Gorilla gorilla*) are known to swallow whole and defecate intact leaves. The habit has been shown to be a physical means of purging intestinal parasites. Chimpanzees and man co-existing in sub-Saharan Africa are also known to ingest the bitter pith of *Vernonia amygdalina* for the control of intestinal nematode infections. Phytochemical studies have demonstrated a wide array of biologically-active properties in this medicinal plant species. In light of the growing resistance of parasites and pathogens to synthetic drugs, the study of animal self-medication and ethno-medicine offers a novel line of investigation to provide ecologically-sound methods for the treatment of parasites using plant-based medicines in populations and their livestock living in the tropics.

African great apes: Self-medication: Diet: Ethno-medicine: Parasite control



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REVIEW ARTICLE

OPEN ACCESS

Ruminant self-medication against gastrointestinal nematodes: evidence, mechanism, and origins¹

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Abstract – Gastrointestinal helminths challenge ruminants in ways that reduce their fitness. In turn, ruminants have evolved physiological and behavioral adaptations that counteract this challenge. Ruminants display anorexia and avoidance behaviors, which tend to reduce the incidence of parasitism. In addition, ruminants appear to learn to self-medicate against gastrointestinal parasites by increasing consumption of plant secondary compounds with antiparasitic actions. This selective feeding improves health and fitness. Here, we review the evidence for self-medication in ruminants, propose a hypothesis to explain self-medication (based on post-ingestive consequences), and discuss mechanisms (e.g., enhanced neophilia, social transmission) that may underlie the category and spread of self-medication behaviors in social groups. A better understanding of the mechanisms that underlie and trigger self-medication in parasitized animals will help scientists devise innovative and more sustainable management strategies for improving ruminant health and well-being.

Key words: Diet selection, Foraging behavior, Condensed tannins, Learning.

- **Primates:** <https://elpais.com/ciencia/2025-05-14/los-chimpances-se-curan-sus-heridas-con-plantas-usadas-por-la-medicina-tradicional.html?outputType=amp>
- **Felines:** https://www.linkedin.com/posts/%C3%A1lvaro-veterinario-consultor_sobre-gustos-hay-mucho-escrito-que-los-activity-7328679429008703489-tmx4?utm_source=share&utm_medium=member_desktop&rcm=ACoAAClriv4BxNQCLtXy9ICAsQqVMrkRMqIEDxw
- **Birds:** https://www.linkedin.com/posts/%C3%A1lvaro-veterinario-consultor_fumatanegra-fumatablanca-biodiversidad-activity-7326291988926881793-A1SH?utm_source=share&utm_medium=member_desktop&rcm=ACoAAClriv4BxNQCLtXy9ICAsQqVMrkRMqIEDxw

03 | Selfmedication

Curitas o aceitera común
Berberomeloe majalis

Avutarda (*Otis tarda*)

Secondary metabolites:

Cantaridin, aphrodisiac terpenoid, ability to cause tissue necrosis(umbilical hernias)
Vesicant activity, stimulates healing

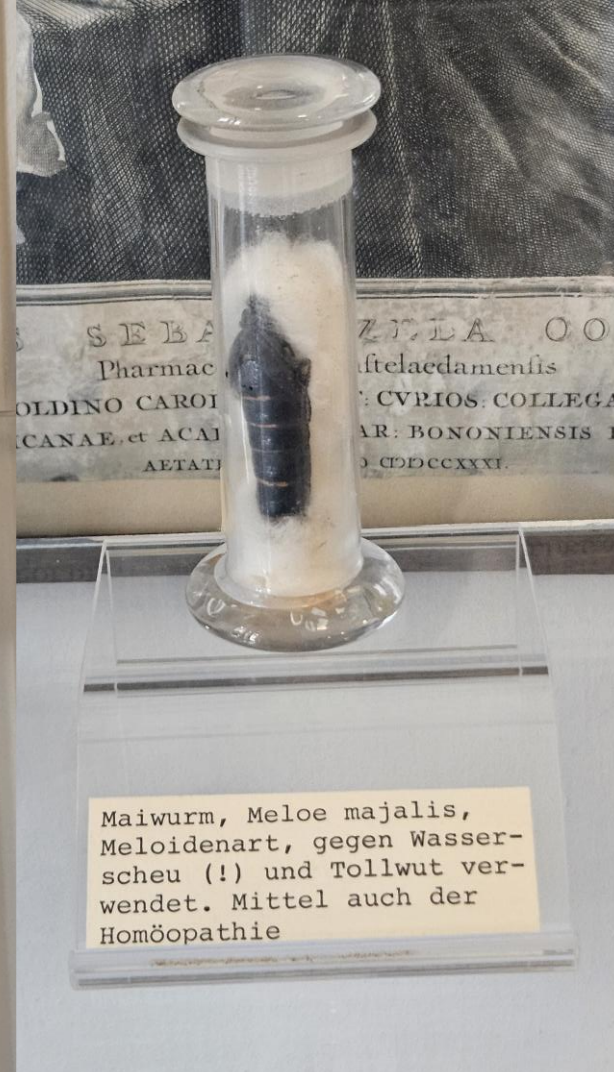
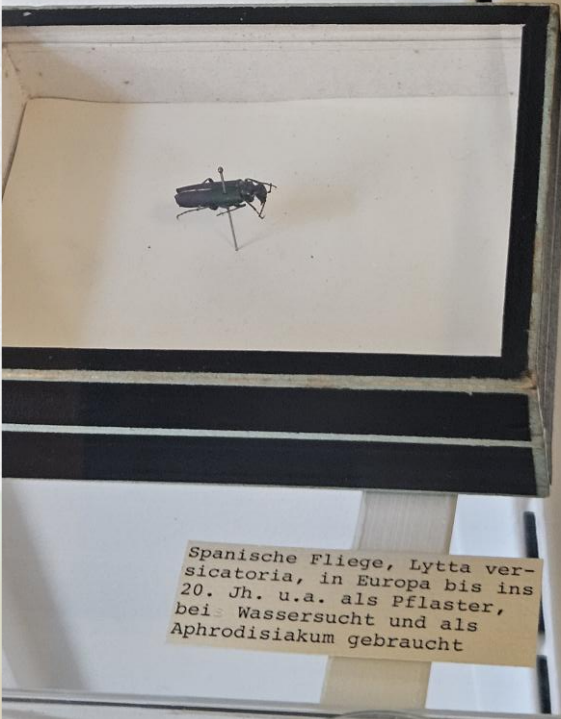
(1) Bautista-Sopelana LM, Bolívar P, Gómez-Muñoz MT, Martínez-Díaz RA, Andrés MF, Alonso JC, Bravo C and González-Coloma A (2022) Bioactivity of plants eaten by wild birds against laboratory models of parasites and pathogens. *Front. Ecol. Evol.* 10:1027201. doi: 10.3389/fevo.2022.1027201 <https://lnkd.in/d6Q9AFiR>

(2) Bravo C, Bautista LM, García-París M, Blanco G, Alonso JC (2014). Males of a Strongly Polygynous Species Consume More Poisonous Food than Females. *PLoS ONE* 9(10): e111057. <https://lnkd.in/dhjYvGET>

(3) Fernando Cortés-Fossati. Meloidos, “curitas” y cantaridina: Apuntes sobre *Berberomeloe majalis* (Linnaeus, 1758), un coleóptero peculiar. Volumen VI, (2018). <https://lnkd.in/d9PG9VcF>

(4) CANTHARIS COMPOSITUM USO VETERINARIO SOLUCION INYECTABLE (2025). <https://lnkd.in/dpDg6CiN>





Museum of the History of Pharmacy
Basel (Switzerland)

N.º 17. = *Tintura de cantáridas.*

Tómese :

Cantáridas en polvo fino. 4 partes.

Aguardiente de 22 gr. . 24 id.

Se mezclan en una vasija conveniente, de modo que quede vacío un tercio ; se tapa ligeramente y se espone por algunos dias al sol ó á una temperatura de veinte á veintin grados : se remueve de cuando en cuando. = Unos la emplean filtrada y otros sin filtrar : su uso es esterno ; á corta dosis es resolutivo , fundente y fortificante ; á mayor dosis es rubefaciente y epispástico. Es útil en las diástasis y torceduras ; dolores reumáticos ; afecciones crónicas ; tumefacciones ó hinchazones frias ; duras é indolentes.

03 | Automedicación
FARMACOPEA VETERINARIA C242
FORMULARIO MAGISTRAL,

CON UNOS PRECEPTOS GENERALES SOBRE EL ARTE DE FORMULAR, LA POSOLOGIA DE LOS MEDICAMENTOS PARA USO INTERNO Y UNA TABLA DE LAS ENFERMEDADES MAS COMUNES DE LOS ANIMALES DOMESTICOS CON INDICACION DE LOS REMEDIOS MAS ADECUADOS Y MAS GENERALMENTE EMPLEADOS EN SU TRATAMIENTO,

Por D. Nicolás Casas,

Catedrático de fisiología en el Colegio de Veterinaria de esta Corte, individuo de la Sociedad Económica Matritense, Vice-Censor de la misma, Académico y Bibliotecario de la de Ciencias Naturales de Madrid, corresponsal de varias corporaciones científicas nacionales y extranjeras &c.



MADRID: 1843

LIBRERIA DE LOS SRS. VIUDA DE CALLEJA Y CAÑA

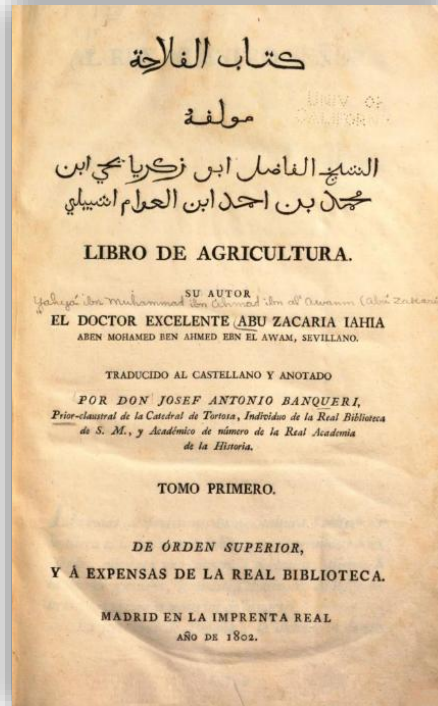
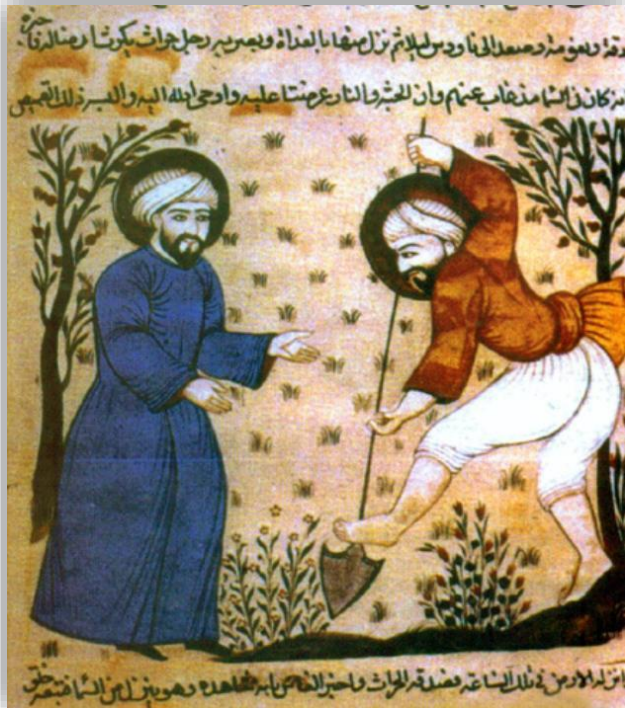
Veterinary Phytotherapy

The Beginning



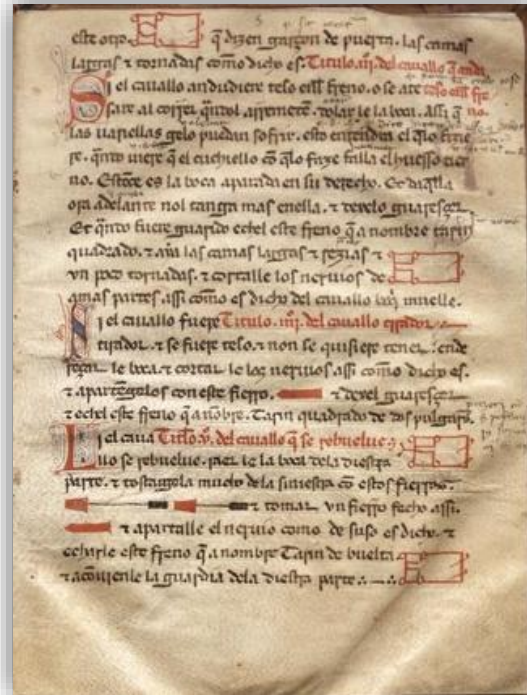
Veterinary Phytotherapy

Arabic Knowledge, Al-Awan "Sevillano", s. XII



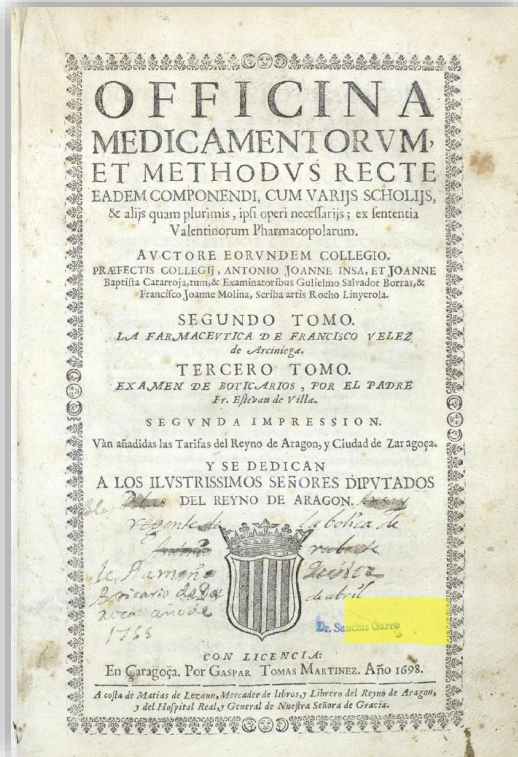
Veterinary Phytotherapy

George Sachs' "book on horses", published in 1936



Veterinary Phytotherapy

First official Spanish pharmacopeia, 1698



Miorcy *Rx.* Succi cotoneorum acetoso-
doniorum rum. lib.xx.
aromati- Vini antiqui. lib.x.
ca Mesues Coquantur cum facilitate, id est,
lento igne, ad consumptionem ter-
tiæ partis, auferendo semper spu-
mam, deinde coletur, & dimittatur
residere, vt. clarescat; tunc projice
super illud,
Mellis. lib.vj.
Iterum coquantur, & auferatur
spuma eius, & projiciantur super il-
lud species alephanginæ in panno li-
gate, & sunt, quæ secuntur;
Cinnamomi,
Heil, id est, cardamomi, } aña. 3. iij.
Cariophyllorum, } 3. ij.
Zinzeberis, }
Mastiches, } aña. 3. j.ß.
Crocī, } 3. ij.
Ligni oloes, } aña. 3. j.ß.
Macis. }
Vltimo aromatizetur cum
Moschi, scrup. j.
Galliæ moschata. 3. ij.

Veterinary Phytotherapy

Spanish Pharmacopea Matritiensis, 1780

REGNI VEGETALIS STIRPES, HERBÆ, ET FOLIA
magis usualia.

A

ABrocanum Mas.
Abfynthium Vulgare.
Adiantum, seu Capillus Veneris.
Agrimonia, seu Eupatorium.
Alchimilla, seu Pes Leonis.
Amaracus, seu Majorana.
Anagalis aquatica, seu Becabungia.
Anethi fummitates.
Anthos, seu Ros marinus.
Apiastrum, seu Meliffa, seu Citrago.
Artemiffia.
Asplenium, seu Cæterach.

B

BArdana, seu Lappa major.
Beta alba.
Betonica.
Bifmalva, seu Althæa.
Branca urfina.
Brunella, seu Confolida minor.
Bugloffum.
Bupthalmum.

C

CAlamintha.
Calendula, seu Chalta.
Capillus Veneris.
Carduus benedictus.
Cauda Equina, seu Equifetum.
Centaurii minoris fummitates.
Centumnodia, seu Polygonum.
Ceterach, seu Asplenium.
Chamædrys, seu Triffago.
Chamæmelum.
Chamæpitys, seu Iva arthritica.
Chelidonium.
Cichorium.
Cicuta.
Citrago, seu Meliffa.
Cynogloffum.

D

DEns Leonis, seu Taraxacum.
Diapenfia, seu Sanicula.
Dictamnus Creticus.

F

Farfara, seu Tuffilago.
Ferraria, seu Scrophularia.
Fœniculum.
Folium Indicum, seu Malabathrum.
Fragaria.
Fumaria.

G

GAlega, seu Ruta Capraria.
Galeopsis, seu Urtica mortua.
Gallium.
Genifta.
Geranium.

H

HEdera terrestris.
Hepatica, seu Lichen.
Hyofcymus albus.
Hyperici fummitates.
Hyppomarathron, seu Fœniculum.

J

Jacobeæ.

M

MAajorana, seu Sampfucus, seu Amaracus.
Malabathrum, seu Folium Indicum.
Malva.
Marrubium, seu Prafium album.
Marum Cortufi.
Matricaria.
Melilotus, seu Trifolium odoratum.
Meliffa, seu Apiastrum.
Mentha fativa.
Mercurialis.
Millefolium.
Mufcus arboreus, seu Lichen cinereus.

N

NArdus Celtica, seu Spica Celtica.
Nardus Indica, seu Spica Indica.
Nardus Germanica, seu Lavendula.
Nasturtium.
Nepeta.
Nicotiana.

PHARMACOPŒIA MATRITENSIS

REGII, AC SUPREMI HISPANIARUM
PROTOMEDICATUS

*Auctoritate, juffu atque auspiciis
elaborata.*

EDITIO SECUNDA

Locupletior, et longè emendatior.



MATRITI.

Typis ANTONII PEREZ DE SOTO. M. DCC. LXII.

Veterinary Phytotherapy

The Royal Apothecary (Pharmacy)

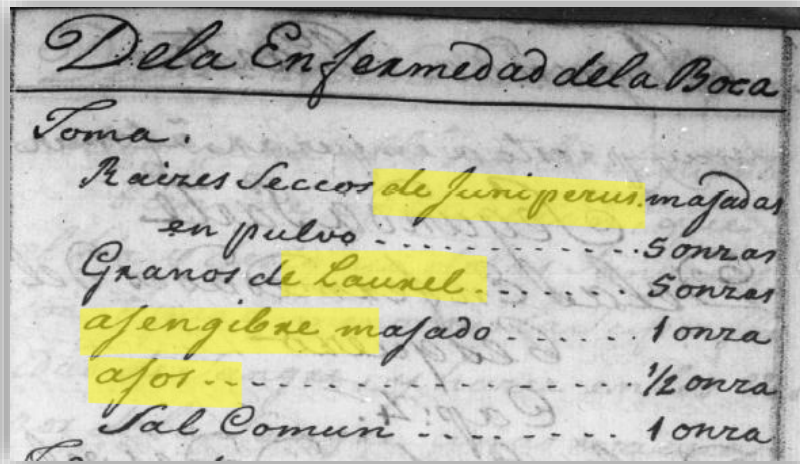
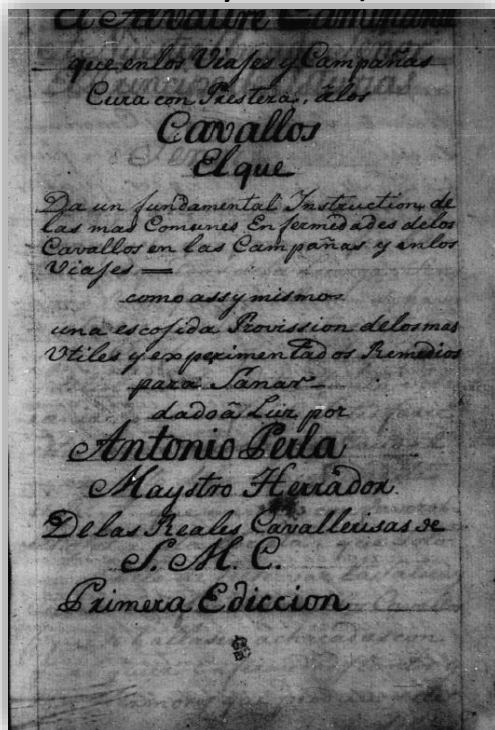


Allium ursinum
Properties (treatment intention:
Anthelmintic;
Stimulant; Stomachic;
Vasodilator;
Disinfectant;
Depurative.

Monks in Monasteries approved by the Royal Apothecary produced medicinal plants.

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The “Travelling Horse Doctor” Manuscript by Marshall Antonio Perla
(18th century, 1780)



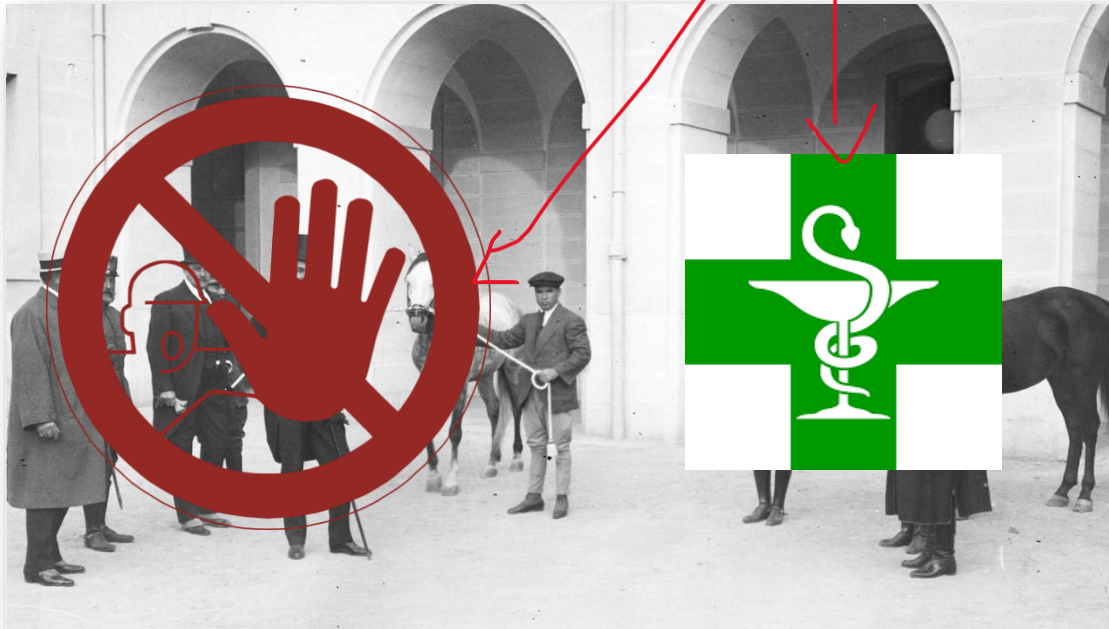
Juniperus spp.
Laurus nobilis
Zingiber officinale
Allium sativum

Imagen cedida por Dr. Ángel Salvador Velasco. Tesis doctoral: **MEDICAMENTO DE USO ANIMAL: NEXO DE DOS REALES INSTITUCIONALES, REAL CABALLERIZA Y REAL BOTICA (1789 – 1868)**

Fuente: "El albéitar caminante". Manuscrito de Antonio Perla (S. XVIII)
<https://dialnet.unirioja.es/servlet/articulo?codigo=8433675>

Veterinary Phytotherapy

The Royal Stables, Marshals, **1780-1924**



Veterinary Phytotherapy

Miel	9 1/2 @ 15 libras	879
Sal	11 1/2 fanegas	463
Salvado	151 1/2 "	2.928
Ungüento basilicón	812 libras	4.872
Ungüento de altea	18 "	198
Ungüento de escabiosa	180 "	1.176
Ungüento de grietas	12 "	72
Ungüento de insectos	20 "	144
Ungüento egipciaco	1 "	8
Ungüento magistral	8 onzas	120
Ungüento rosado	8 libras	80
Botes		
Calderas		
Lienzo para vendaje		
Orillos		
Estopa		
Lienzo, orillo y estopa		
Velas		

Manera de Azar 20 1/2 libras a 6 1/2 " 8195
 Inmentina 16 libras a 1 " 160
 Espina de An 1 1/2 libras a 2 " 300
 Aceite de Almondas Dulces 3 libras 60
 Liriac Magna 1 libra a 1 " 100
 Linajudo 6 libras a 2 " 120
 Anthonio Molido 7 libras 140
 Sal de Nro Molido 6 libras 120
 Vitrua fuerte 2 libras 40
 Lipura de Aloe 1 libra 20
 Flor de Anise 2 libras 40
 Aguafuente 1 libra 20
 Aceite de Caprea 5 onzas 100
 Clavo de Caprea 3 onzas 60
 Azafian 1 onza 20
 Indigo fino 1 libra 100
 Cola fuerte 1 libra 100
 alab 2462



Knautia arvensis (L.) Coult.



Fitoterapia Veterinaria

Escabiosa

***Knautia arvensis* (L.) Coult.**

Riesgo:

Español: Escabiosa, Hierba del sarampión, Viuda silvestre

Nombres botánicos: *Knautia arvensis*, *Scabiosa arvensis*

Català: Escabiosa, Vídua borda

Euskara: Atz-bedar, Atzbelarra

Português: Escabiosa, Saudade dos campos

Français: Knautie des champs, Scabieuse, Scabieuse des champs

English: Field scabious

Italiano: Vedovina

Deutsch: Witwenblume



Fuente: <https://www.fitoterapia.net/>

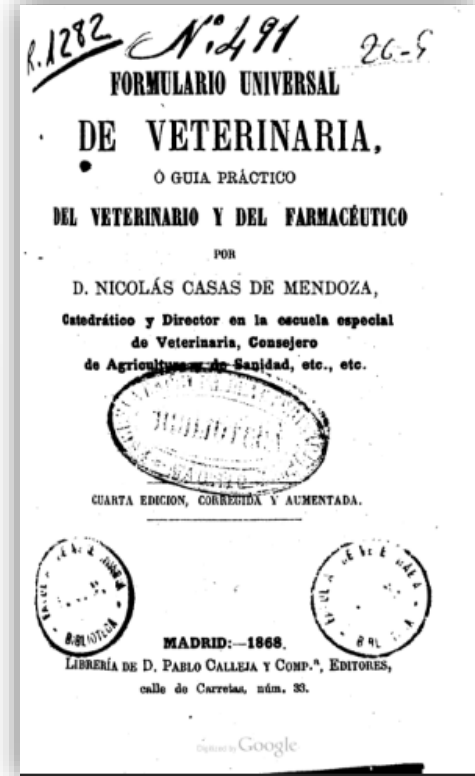
Veterinary Phytotherapy

The Reformer of Veterinary School, 1801 – 31.XII.1872

Veterinary Pharmacopoeia and Magistral Formulary, Marshall
Nicolás Casas de Mendoza, published 1843-1844-1868



The first veterinary school in Spain was the Royal Veterinary School of Madrid, founded by Charles III in 1792 and opened in 1793.



Fitoterapia Veterinaria



Producto	Cantidad	Importe/reales
Aceite de Almendras Dulces	4 1/2 libras	36
Aceite de Enebro	2 1/4 "	5 1/4
Aceite de Hipérico	1 "	10
Agua de la Reina de Hungría	1 libras 8 onzas	22
Alcanfor	4 onzas	9
Aloe	1 libras	30
Alumbre crudo	1 "	1 1/2
Alumbre de Roca	2 "	4
Antimonio en Piedra	6 "	12
Antimonio molido	25 1/2 "	114
Arsénico	6 onzas	2
Arsénico Rubio	2 "	1
Azufre en canuto	1 libras	1 1/2
Bayas de Enebro	2 "	4
Benjuí	1 onza	2
Cardenillo molido	15 onzas	15
Carmin de tabla	12 "	12
Clavo de especia	3 "	10

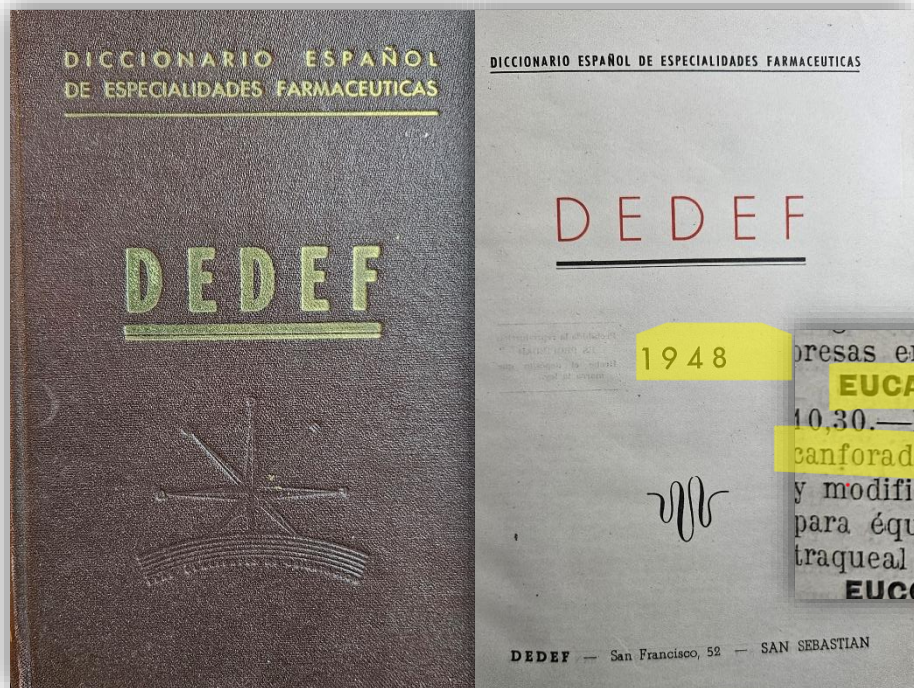


List of ingredients (singles) for the preparation of pharmaceutical products by the **Marschals** in charge of the Royal Apothecary.

Imagen extraída de Tesis doctoral: **MEDICAMENTO DE USO ANIMAL: NEXO DE DOS REALES INSTITUCIONALES, REAL CABALLERIZA Y REAL BOTICA (1789 – 1868)**, la por Dr. Ángel Salvador Velasco.
"COMPRA DE SIMPLES EFECTUADA POR EL MARISCAL DE NÚMERO BERNARDO RODRÍGUEZ"

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Spanish dictionary of pharmaceutical specialities
1947-1972



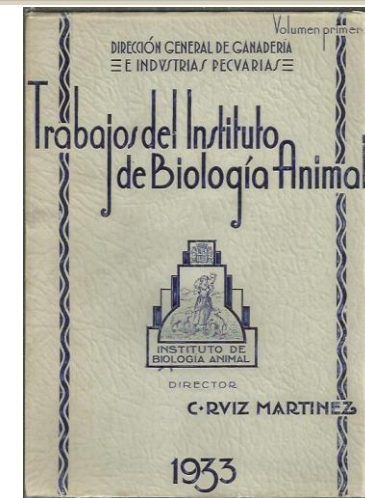
presas empapadas.

EUCALPINE (VET.).—PINO.—c. con 5 amp. de 10 c.c. Precio 10.30.—Fórm: **Eucaliptol**. Gomenol y Terpinol aa 0,15. Aceite al-
canforado c.s.p. 10 c.c.—Prop: Antiséptico del aparato respiratorio y modificador de las secreciones bronquiales.—Dosis: 1 amp. diaria para équidos y vacunos. Para pequeños animales: de 1 a 4 c.c. Via traqueal o intram.

EUCODAL AMPOLLAS.—MERCK.—c. con 10 de 0,01 gr. en 1 c.c. Fórm.

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Type of Regulation	Number/Name	Date		Specific Vet content	Medicinal F
Royal Decree	--, pharmaceutical specialities	1924	February 13	No	No
National Decree	--, Medicines	1931	December 7	Yes	--
National Decree	--, Medicines	1933	December 5	Yes	--
National Order	--, pharmaceutical specialities	1934	May 14	Yes	--
National Law	National Health Basis	1944	November 25	Yes	Yes
Royal Decree	163, Animal health products	1981	January 23	Yes	No
National Law	14, Medicines	1986	April 25	Yes	No
National Law	25, Medicines	1990	December 20	Yes	No
Royal Decree	109, Veterinary Medicines	1995	January 9	Yes	Yes
National Law	29, Medicines	2006	July, 26	Yes	Yes/ formulas magistralis
Royal Decree	1246, Veterinary Medicines	2008	July 18	Yes	Yes /formulas magistralis
Royal Decree	1, Medicines	2015	July 24	Yes	Yes
Royal Decree	1157, Veterinary Medicines	2021	December 28	Yes	Yes
Royal Decree	666, Veterinary Medicines	2023	July 18	Yes	No
Royal Decree	767, Veterinary Medicines	2025	September 2	Yes	Yes



National Institute of Animal Biology

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The Royal Decree (RD) of 9 February 1924, articles 2, 9, approved the first Spanish Regulations for the manufacture and sale of “pharmaceutical specialities”, which, although designed for medicines for human use, made no distinction between medicines for human and animal use, covering all specialties and preserving the pharmacist's right to manufacture, including **magistralis formulas** in accordance with the current Spanish Official Pharmacopoeia (7th Ed., 1915). Included highly active substances and usable doses, excluding preparations for external use intended for **veterinary medicine**;

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The Order of 14 May 1934 consolidated the separation and regulated the manufacture and sale of medicines, disinfectants, serums and vaccines for livestock. It granted the Directorate General for Livestock the power of registration and the Institute of Animal Biology the power of verification of their safety and efficacy.

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National Health Basis Law, was developed in 1944 for the achievement of health and the strengthening of citizens.

Regarding pharmaceutical services, article 16 defines medicine as a simple or complex substance prepared for its immediate medicine use, from mineral, medicinal plant and animal sources for its use as a **human or veterinary medicine**. The existence of a list of plants accepted for use as medicinal products would be related to the Official Spanish Pharmacopoeia (8th Ed., 1930),

Veterinary Phytotherapy

Medicine National Law 25/1990, **begins a new stage specific national regulation** adopted from the different European Directives, about **veterinary medicines**, under a single National Register where all medicines will be included under the same technical standards, humans and animals medicinal products. In the article 42, define **plant medicinal products** are shall be regulated under to the **regime for magistral formulations and officinal preparations**, no distinction between veterinary and human medicines and including the creation of a negative list of medicinal plants.

Veterinary Phytotherapy

The National Law Medicine 29/2006, articles 42, 43, 51, establishes the elimination of the mention of “pharmaceutical specialities” for medicines for human and veterinary use, describes the conditions for prescribing magistral formulas and officinal preparations for veterinary use, and establishes the creation of a **simplified register of traditional herbal medicines for human use**. Thereafter, the RD 1246/2008 (derogated, 29/12/2021) regulation of industrially manufactured veterinary medicines excluded any control over extemporaneous preparations and officinal preparations.

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In parallel, appear the RD 1/2015, articles 37 (e), 42 (4), which describes the requirement that the formulas magistralis, or officinal preparations, must be **prescribed by a veterinary for an individual animal or a small number of animals on a specific farm under the direct care of that veterinarian and, manufactured by the pharmacy**. According to the text, these preparations must follow the instructions set out in the National Formulary Formula Magistralis (3rd Ed., 2020), under the conditions defined in the articles 42-43-44-51 (1).

Veterinary Phytotherapy

The RD 666/2023, describe the specific conditions to use **formulas magistralis** an officinal preparations in veterinary medicine under the category of **exceptional prescription due to *therapeutic vacuum***². This RD applies conditions over veterinary medicinal products in addition to the RD 1157/2021 published 28th december, which includes the **registration of veterinary medicines based on medicinal plants** under the same regime as other veterinary medicines.

²Therapeutic vacuum: absence of a suitable veterinary medicinal product authorised for the specie, specifically only if there is,

- (a) no appropriate veterinary medicinal product authorised for another species and/or disease,
- (b) no authorised human medicinal product and
- (c) no appropriate medicinal product authorised in another Member State cannot be used under the same conditions of use as in point (a).

Veterinary Phytotherapy

The most recently and current regulation on industrially manufactured veterinary medicines, **RD 767/2025** published 2th september, amending the RD 1157/2021 and RD 666/2023, in the article 31bis, introduce the **simplified registration system for veterinary medicinal products based on traditional herbal medicines**, previously described as veterinary medicines in RD 1157/2021 in the chapter II, articles 5, 6, which are according to articles 18-19-20-21-**22³** in the European Law 2019/6³.

Veterinary Phytotherapy

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1. Royal Decree, of February 13, 1924, approving the Regulations for the preparation and sale of pharmaceutical specialities. <https://www.boe.es/buscar/doc.php?id=BOE-A-1924-1617>
2. Madrid Gazette No. 342, of December 8, 1931. Ordinary Bulletin, page 1519. https://www.boe.es/diario_gazeta/comun/pdf.php?p=1931/12/08/pdfs/GMD-1931-342.pdf
3. Madrid Gazette No. 342, of December 8, 1933. Ordinary Bulletin, page 1606 https://www.boe.es/diario_gazeta/comun/pdf.php?p=1933/12/08/pdfs/GMD-1933-342.pdf
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¡Thanks!



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