Veterinary phytotherapy: A survey of French historical resources from late 18th to mid 20th centuries.

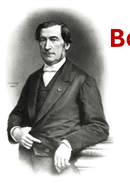
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Context, Mat. & Meth. The need for a regulatory definition of Traditional veterinary herbal drugs at the European level prompted the CA/22109-MedPlants4Vet consortium to **document the use of phytotherapy in veterinary practice**, including its **historical construction** [1]. As part of this effort, we inventoried the available **French academic and professional literature**, from the creation of the schools of veterinary medicine to the mid-20th century, and conducted a search for plants used for the treatment of farm animals, hunting dogs and pets, either alone, in combination or mixed with minerals or pure compounds. We identified 40 major bibliographical resources, including formularies, written by veterinarians, medical doctors, pharmacists, breeders or agronomists [2]. Completeness of data and degree of precision were variable, prompting the **selection of 14 main sources** (5 major, 9 as controls), considered as complete and representative, and appearing as influential. They were inventoried by a dual **text-mining and manual approach**. **Plant species and parts, preparations, therapeutic indications** and their **correspondence with ATCVetCodes, routes of administration, types of associations, conditions of use** and **target-animal species** **were inventoried**, following consortium guidelines. Therapeutic indications were normalized for quantitative analysis. The corpus was compared with current institutional resources.

Historical sources used



- BOUCHARDAT†, 1862 — *n = 1403*
- VILLIERS, LARBALÉTRIER, 1892 — *n = 47*
- FONTAN, 1908 — *n = 9*
- CERBELAUD†, 1910 + 1922 — *n = 1416 + 67*
- FRENCH PH. 9TH ED. 1972 — *n = 20*
- BOURGELAT, 1765 — *n = 141*
- LEBAS, 1809 — *n = 26*
- DELAFOND, LASSAIGNE, 1841 — *n = 81*
- MOLLEREAU, PORCHER, 1904 — *n = 207*
- CAGNY, 1905 — *n = 85*
- CANAL, 1915 — *n = 10*
- GARNIER, BÉZANGER-BEAUQUESNE†, DEBRAUX, 1961 — *n = 557*
- SIGNOL, CAGNY, GAUBERT 1904 — *n = 20*





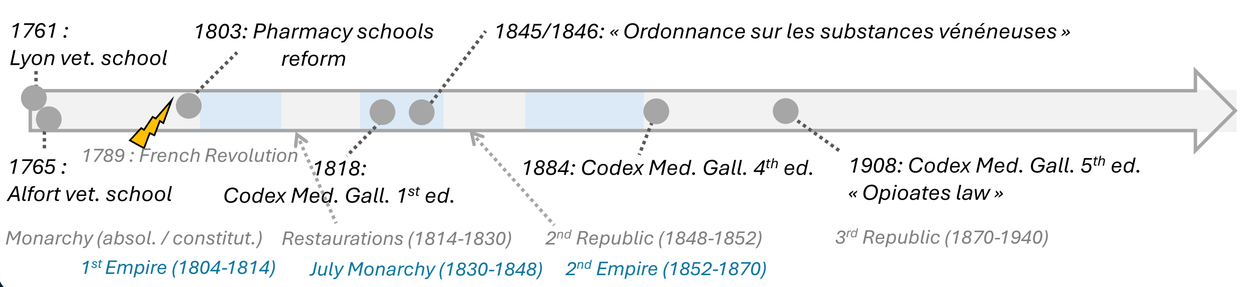




n: number of inventoried uses
Underlined: comprehensive search
Plain: targeted search only

† Pharmacists; Others are veterinaries or professionals

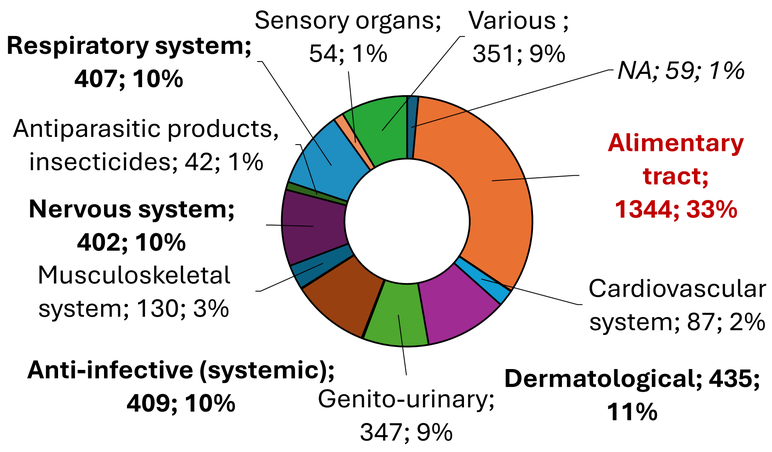
Historical context



→ Corpus: Dataset of 4,081 records (from 14 references published between 1765 and 1972)

Conditions of use

Therapeutic spheres (ATCVetCodes) – nb records

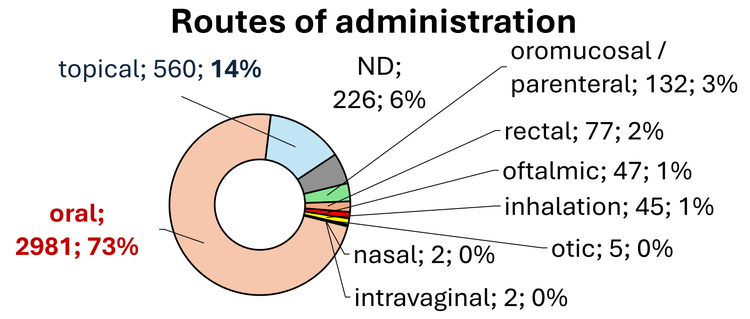


→ ***Strong representation of anthelmintics – 44 spp., 5 main spp.***

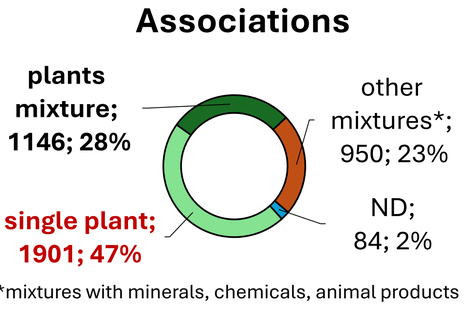
Target animal species

	nb records	%
cat	104	2.5%
cattle	**438**	**10.7%**
chicken	11	0.3%
dog	**516**	**12.6%**
equids	**86**	**2.1%**
goat	85	2.1%
horse	**804**	**19.7%**
pig	124	3.0%
pigeon	1	0.0%
poultry	17	0.4%
rabbit	2	0.0%
ruminants	16	0.4%
sheep	192	4.7%
small rodent	1	0.0%
not specified	*1684*	*41.3%*

Routes of administration

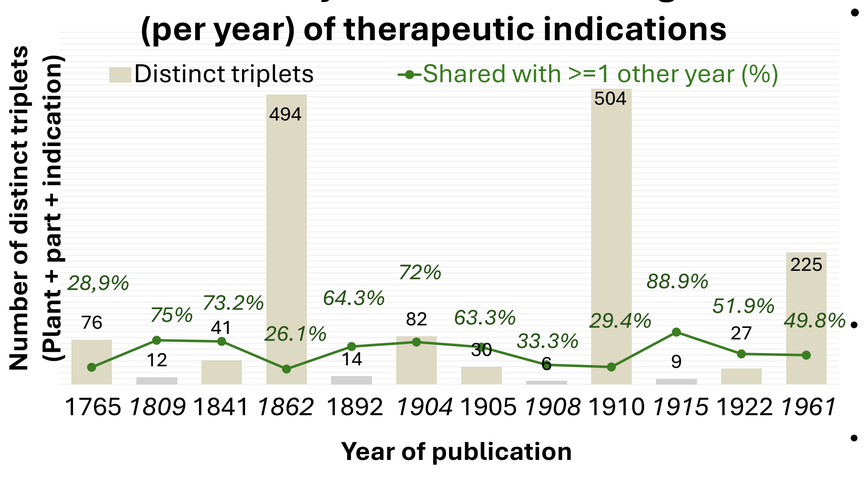


Associations



*mixtures with minerals, chemicals, animal products

Documentary volume and convergence (per year) of therapeutic indications

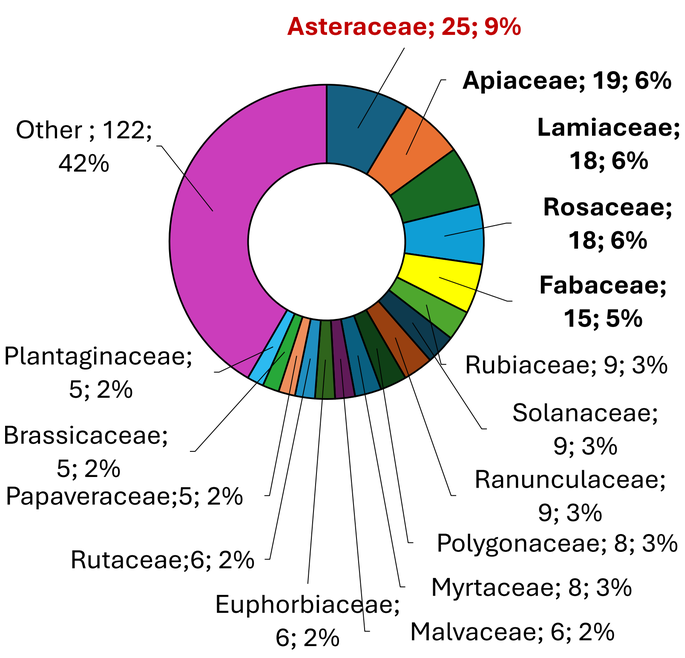


- ***Historical convergence*** **Is globally weak. The sources agree on what a plant is mainly for but often disagree on secondary uses.**
  - Strict agreement between >2 sources is low (10.8%). 81% of uses are attested by 1 source only.
- Works published between 1890-1908 are largely inspired by earlier formularies.
- 127 formulas are drawn from official *Codices*.

→ 251 taxa, from 91 botanical families; 408 botanical drugs

- Mostly European species, **some being largely represented** throughout the studied period:
- 10 species account for 35.5% of the uses and are globally shared by historical resources.
- Global correlation with European ethnobotanical inventories (%, taxa per family) [3].
- **Strong statistical correlation between families and therapeutic spheres** (χ^2, $p<0.001$).

Number of used taxa per family

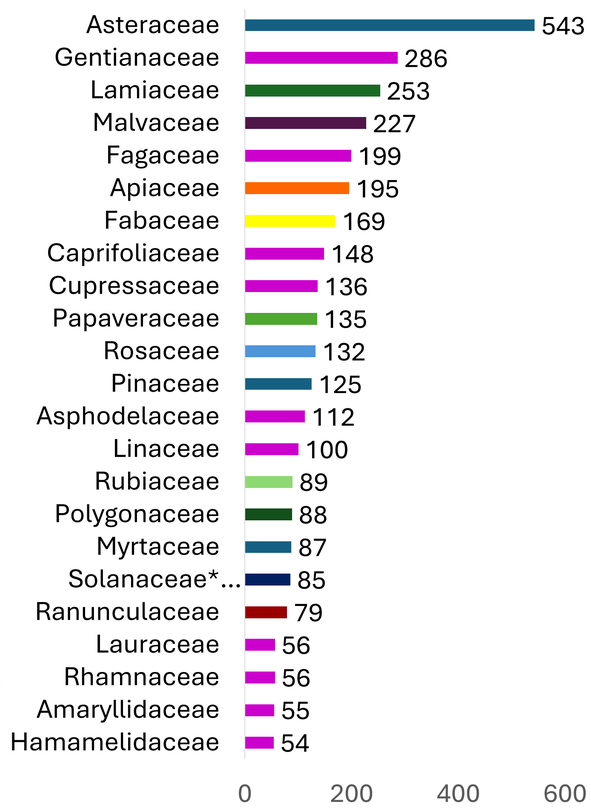


- Several « important species » are absent in the corpus.

→ 30 essential oils used (255 citations)
- from 1862, with strong decrease after 1920.

Botanical families: uses

(number of uses, >50)



Comparison with contemporary uses and statuses

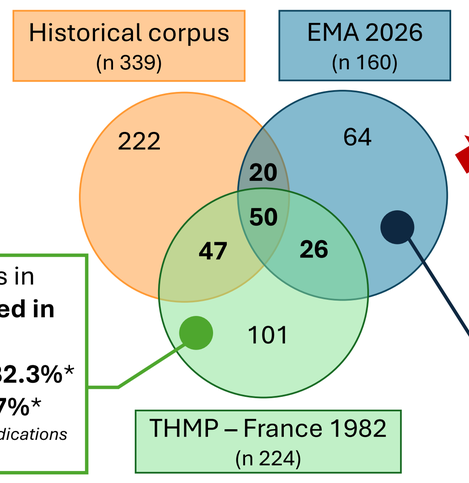
Taxa / botanical drugs / therapeutic spheres / traditional indications were compared with institutional contemporary resources:

- **French List of Medicinal Plants** (*"Liste A"*: 453 entries / *"Liste B"* [toxic]: 119 entries) (Fr. Ph., 2026)
- **European Pharmacopoeia (2026)** (280 botanical drugs, 33 essential oils),
- **French former registration rules on Trad. Herbal Medicinal Products** (193 taxa / 591 taxa-indication) ("Cahier de l'Agence du Médicament", 1982)
- **EMA monographs** (157 botanical drugs / 315 drug-indication),
- **Maximum Limit of Residues status** (61 taxa / botanical drugs, 11 essential oils (*homeopathy excluded*)) (Table 1 - Commission Regulation (EU) No 37/2010).

→ ***48.1% of botanical drugs of the historical corpus are still considered as being of pharmaceutical use in 2026 (n 163 ; Fr. Ph., Eur. Ph.)*** *- respectively: Fr. Ph. "Liste A": 36.3% (n 123 ; p<0.0001) / Fr. Ph. "Liste B": 6.2% (n 21; non signif.) / Eur. Ph. : 24.5% (n 83 ; p<0.0001)*

Botanical drugs (Taxa+Plant part) inventory versus contemporary therapeutic use:

→ *Presence in ref.*
→ *Comparison of:*
- *Therap. sphere*
- *Therap. indication*



→ ***40.1% of botanical drugs from the corpus are recognized for Human use in Europe, with traditional indications.***

- **28.6%** of botanical drugs in the corpus are **referenced in THMP-Fr. guidelines**
- Shared therap. sphere: **82.3%***
- Identical indication: **17.7%***

(*Fisher, $p<0.0001$; "identical": *close indications not considered here*)

- **20.6%** of drugs in the corpus are **referenced by EMA-HMPC**
- Shared therap. sphere: **72.9%***
- Identical indication: **34.3%***

(*Fisher, $p<0.0001$; "identical": *close indications not considered here*)

Therapeutical sphere: based on ATCVetCodes assigned to EMA / French documentation. Indications: based on simplified coding of European / French wordings. ***Note that many historical indications are out of the actual scope of phytotherapy and traditional herbal medicinal products****. Correlation is diminished by taxonomical uncertainty (e.g. "Abies sp.").*
Statistical analysis: Fisher Test, Permutation test. Comparison with authorizations as Feed additives remains to be performed.

→ *Significant convergence of uses with modern traditional therapeutic indications*

- The comparison demonstrates a statistically significant, non-random convergence between historical French veterinary uses and French and EMA-approved indications. The correlation with former French guidelines is stronger than with EMA.
- **Toxic species: 51 Botanical drugs** of the corpus are considered as **highly toxic** (Fr. Pharm. "*Liste A + toxique*", Fr. Pharm. "*Liste B*", CE 1992 [5]).
- **MLR: Only 10% of botanical drugs (n 34) and 15.2% of essential oils (n 5) of the corpus have MLR status** ("*no MLR required*", homeopathy excluded). Examples of **alternative MRL status determination** proposed by ANMV all correspond to species from the corpus.

- **More than 4000 use mentions** were identified, for about **250 plant species**, in a part of French veterinary and pharmaceutical literature spanning 2 centuries.
- **A major part of these species falls within the priorities** defined by **CA/22109-MedPlants4Vet** , **ANMV** (French Vet. Drugs Agency) or professional associations such as **RéPAAS** [4].
- Comparison of these historical data with contemporary European institutional resources evidenced a **strong tradition**, despite its heterogeneity, showing congruence with the evolution of pharmaceutical and veterinary sciences and regulations throughout the modern era [3].
- In regard to ANSM and EMA guidelines, **a significant part of convergent traditional veterinary uses could possibly fulfill the criteria of presumption of safety and efficacy defined for traditional Human use** under Directive 2001/83/EC.
- **Only 10% of inventoried plant species have MLR status**: Many taxa should be assessed to allow their therapeutic use and ease their evaluation in producing animals [4].

[1] Article 157 in EU-Regulation 2019/6; *See* **MedPlants4Vet** website: https://www.medplants4vet.eu/fr/ ; **[2]** Vallat F. *Bull Soc Fr Hist Med Sci Vet,* **2018**, 18:125-214, ; Degueurce C., Vallat F. *Soigner les animaux : Histoire de la médecine vétérinaire en France*, Actes Sud, **2026** ; **[3]** e.g. Dal Cer M. *et al.*, *Plants*, **2023**, 12, 135; [3] Lees P. *et al. Front Vet Sci* **2022**; 8:777809 ; **[4]** Champy P. *et al. Phytotherapy and aromatherapy in food-producing animals - Proposed human health risk assessment methodology*. Anses opinion / Collective expert appraisal report, Anses 2022: 284 p. ⟨anses-03923114⟩ ;
[5] Commission of the European Communities, Committee for Prioritary Medicinal Products, *Herbal Drugs with serious risks*, 08/15/1992; RéPAAS website: https://www.repaas.org/

Historical corpus references → *see QRCode*.