Egyptian Herbal Monograph

Volume 2

Medicinal plants used in Egypt

Egyptian Drug Authority (EDA)

2025

Egyptian Herbal Monograph

Medicinal Plants Used in Egypt

Salix spp. صفصاف

1. Names & Synonyms

Salix spp. (1-4)

***S. purpurea* L.**
Syns.: *Knafia purpurea* (L.) Opiz, *Salix helix* var. *purpurea* (L.) Lej., *S. monandra* Ard., *S. monandra* var. *purpurea* (L.) Boenn., *Vetrix purpurea* (L.) Raf.

***S. daphnoides* Vill.**
Syns.: *Salix aglaja* K.Koch , *S. bigemmis* Hoffm., *S. caspica* Willd.

***S. alba* L.**
Syns.: *Argorips alba* (L.) Raf., *Salix pallida* Salisb.

S. fragilis L. (Hybrid)Hybrid formula is *S. alba* x S. *euxina.*

***S. pentandra* L.**
Syns.: *Amerina glandulosa* Raf., *Pleiarina pentandra* (L.) N.Chao & G.T.Gong, *Salix glandulosa* Raf., *S. polyandra* Gled. ex Schrank.

Family: Salicaceae (1,4).
Arabic name: Safsaaf صفصاف (5).

English name: Willow Bark (2).

2. Parts used for medicinal purpose

- Bark (2, 4, 6-8).

3. Major chemical constituents

- **Salicinoids** (9,10) **(Salicylic glycosides)**: mainly salicin beside salicortin, tremulacin (11).
- **Flavonoids: Flavanones (**naringenin; naringenin-5-O-glucoside; naringenin-7-O-glucoside); **chalcones** (isosalipurposide); **flavan-3-ol (**catechin, epicatechin, B type procyanidin (11, 12, 10).
- **Others**: Anthocyanins, organic acids (phenolic & aromatic) (9).

4. Medicinal Uses (Indications) (1,2,4 ,6,7)

A. Relief the short-term treatment of low back pain.

B. Relief of minor articular pain and symptomatic treatment of mild rheumatic conditions.

C. Relief of fever associated with common cold.

D. Relief of headache.

5. Herbal preparations correlated to medicinal use (1,2,4,6,7)

1- Comminuted herbal substance is added to hot water as a herbal tea in the form of infusion or decoction.

2- Powdered herbal drug.

3- Dry extract

3.1. Extraction solvent ethanol 70% (15% total salicin).

3.2. Extraction solvent water.

4- Liquid extract extraction solvent ethanol 25% (1:1).

5- Tincture extraction solvent ethanol 25% (1:5).

Herbal preparations (2-5) are in pharmaceutical dosage forms. The pharmaceutical form should be described by the pharmacopoeia full standard term.

6. Posology and method of administration correlated to medicinal use

Adults and elderly

Preparation 1

Indications B- D

- Infusion: 1-3 g of the comminuted herbal substance in 150 ml of boiling water as an herbal tea, 3 - 4 times daily (2,8).

- Decoction: 3-4 g of the comminuted herbal substance boiled with one cup of water (200 ml) covered, let stand for 15 minutes and strain. Drink warm and freshly prepared after meals, 1-3 times daily (corresponding to 60–240 mg total salicin) (1,2,4,7).

Preparation 2

Indications B- D

- 260 - 500 mg, 3 times daily, to be taken after meals with large quantity of hot water (2,8).

Preparation 3

Preparation 3.1 (2)

Indication A

Single dose: 393 mg to 786 mg, up to 2 times daily.

Daily dose: 393 to 1572 mg

Preparations 3.2
Indications B- D

- 480- 600 mg, twice daily (2,8), equivalent to 120–240 mg of total salicin (1).

Preparations 4
Indications B- D

1- 3 ml, 3 times daily (2,4,7), equivalent to 120–240 mg of total salicin (1,7).

Preparations 5
Indications B- D

- 5 - 8 ml, 3 times daily (13).
- Equivalent to 120–240 mg of total salicin (1).

Duration of use (2)

- If the pain or symptoms persist during the first week of use of the medicinal product, a doctor or a pharmacist should be consulted.
- **For indications A and B:** Not to be used for more than 4 weeks.
- **For indication C**: If the symptoms persist longer than 3 days during the use of the medicinal product, a doctor or a pharmacist should be consulted.
- **For indication D:** If the symptoms persist longer than one day during the use of the medicinal product, a doctor or a pharmacist should be consulted.

Method of administration: Oral use (2,4).

7. Contraindications (1,2,6)

- Hypersensitivity to the active substances and to other plants of the same family.
- In patients with salicylate intolerance or other NSAIDs (e.g. history of angioedema, bronchial spasm or chronic urticaria in response to salicylates or to other NSAIDs).
- In patients with asthma.
- Active peptic ulcer disease.
- In case of Glucose-6-phosphate dehydrogenase deficiency.
- Children and adolescents under 18 years of age.
- Severe liver or renal dysfunction.
- Coagulation disorders.

8. Special warnings and precautions for use (2,4,7,8)

- If the symptoms worsen or fever exceeds 39°C, persists or is associated with severe headache during the use of the medicinal product, a doctor or a pharmacist should be consulted.
- Concomitant use with salicylates and other NSAIDs is not recommended without medical advice.
- The product is not intended to be used in case of acute arthritis.

- Individuals with diabetes, gout, haemophilia and hypoprothrombinemia should be aware of the possible risks associated with salicylates products in Willow bark.

9. Interactions with other medicinal products and other forms of interaction

- Willow bark may increase the effects of anticoagulants such as coumarin derivatives (1,2,4,6,8).
- Concurrent administration of willow with other salicylate-containing products, such as aspirin, should be avoided (4).
- Irritant effects of salicylates on the gastrointestinal tract may be increased by alcohol.
- Barbiturates and oral sedatives have been documented to increase salicylate toxicity as well as masking the symptoms of overdosage (4).

10. Fertility, pregnancy and lactation

- The use during pregnancy and lactation should be avoided (2,4,7,8).
- No fertility data available.

11. Effects on ability to drive and use machines (2)

- No studies on the effect on the ability to drive and use machines have been performed.

12. Undesirable effects (1-3)

- If adverse reactions occur, a doctor or a pharmacist should be consulted.
- Allergic reactions such as rash, pruritis, urticaria, asthma, exanthema.
- Gastrointestinal symptoms such as, nausea, vomiting, abdominal pain, diarrhea, Dyspepsia and heartburn, may occur.

13. Overdose (2)

- No case of overdose has been reported

14. Relevant biological activities

- Not required as per Egyptian guidelines for registration of herbal medicines.

15. Additional Information

-

16. Date of last compilation/last revision

04/12/2023

References

1.	WHO monographs on selected medicinal plants (2007). Monographs on selected medicinal plants, **4**, 309-322.
2.	European Union herbal monograph on *Salix* [various species including *S. purpurea* L., *S. daphnoides* Vill., *S. fragilis* L.], cortex (2017). EMA/HMPC/80630/2016 - Corr1 Committee on Herbal Medicinal Products (HMPC).
3.	Natural Health Product willow bark (2022). Health Canada, https://webprod.hc-sc.gc.ca/nhpid-bdipsn/atReq.do?atid=white.wil.saule.bla&lang=eng
4.	Barnes, J., Anderson, L. A. and Phillipson, J. D. (2007). Herbal Medicines, 3rd edition. Published by the Pharmaceutical Press. ISBN 978 0 85369 623 0.
5.	Saganuwan, A. S. (2010). Some medicinal plants of Arabian Pennisula. *Journal of Medicinal Plants Research*, **4**(9), 766-788.
6.	PDR for Herbal Medicines (2002). Montvale, NJ: Medical Economics Company, 2nd ed., ISBN 1- 56363-361-2.
7.	ESCOP Monographs (2017). Salicis cortex - Willow Bark. European Scientific Cooperative on Phytotherapy. Simon Mills and Roberta Hutchins, editors. Thieme, Stuttgart. Online series, IBN 978-1-901964-52-3.
8.	Edwards, S. E., Rocha, I. D. C., Williamson, E. M. and Heinrich, M. (2015). Phytopharmacy: An evidence-based guide to herbal medicinal products. 1st edition. John Wiley & Sons, Ltd.
9.	Tawfeek, N., Mahmoud, M. F., Hamdan, D. I., Sobeh, M., Farrag, N., Wink M. and El-Shazly, A. M. (2021). Phytochemistry, pharmacology and medicinal uses of plants of the genus *Salix*: An updated review. *Front. Pharmacol.*, **12**. https://doi.org/10.3389/fphar.2021.593856.
10.	Tienaho, J., Reshamwala, D., Sarjala, T., Kilpeläinen, P., Liimatainen, J., Dou, J., Viherä-Aarnio, A., Linnakoski, R., Marjomäki, V. and Jyske, T. (2021) *Salix* spp. Bark hot water extracts show antiviral, antibacterial, and antioxidant activities - The bioactive properties of 16 Clones. *Front. Bioeng. Biotechnol.* **9**, 797939. doi: 10.3389/fbioe.2021.797939.
11.	Sulima, P., Krauze-Baranowska, M. and Przyborowski, J. A. (2017). Variations in the chemical composition and content of salicylic glycosides in the bark of *Salix purpurea* from natural locations and their significance for breeding. *Fitoterapia,* **118**,118-125. doi: 10.1016/j.fitote.2017.03.005.
12.	Piątczak, E., Dybowska, M., Płuciennik, E., Kośla, K., Kolniak-Ostek, J. and Kalinowska-Lis, U. (2020). Identification and accumulation of phenolic compounds in the leaves and bark of *Salix alba* (L.) and their biological potential. *Biomolecules*, **10**(10), 1391. doi: 10.3390/biom10101391. PMID: 33003576; PMCID: PMC7600001.
13.	Spiteri, M. (2011). Herbal Monographs including Herbal Medicinal Products and Food Supplements. Department of Pharmacy University of Malta. Set and printed by Print Right Ltd, Qormi.