

# **Egyptian Herbal Monograph**

**Volume 3**

**Medicinal Plants used in Egypt**

**Egyptian Drug Authority (EDA)**

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## Medicinal Plants Used in Egypt

*Gymnema sylvestre* (Retz.) R.Br. ex Sm.

جيمنيما

### 1. Names & Synonyms (1)

*Gymnema sylvestre* (Retz.) R.Br. ex Sm.

**Family:** Asclepiadaceae.

**Syns.:** *Marsdenia sylvestris* (Retz.) P.I.Forst., *Periploca sylvestris* Retz., *Apocynum alterniflorum* Lour., *Asclepias geminata* Roxb., *Conocalpis umbellata* Bojer ex Decne., *Cynanchum senegalense* Sieber ex Decne., *Cynanchum subvolubile* Schumach. & Thonn., *Periploca tenuifolia* Humb. & Bonpl. ex Schult., *Strophanthus alterniflorus* (Lour.) Spreng.

**Arabic:** Gymnema جيمنيما

**English name:** Gymnema (2,3).

### 2. Parts used for medicinal purpose

Dried leaves (2, 4).

### 3. Major chemical constituents (5)

- **Saponins:** Gymnemic acids, gymnemasaponins, gymnemoside A,B,C,D,E,F, and gymnemasin A,B,C,D
- **Terpenes:** Gymmestrogenin, gymnemanol, stigmasterol-and lupeol
- **Others:** Gurmarin (polypeptide), flavonol glycoside (Kaempferol 3-glycoside), *d*-quercitol, conduritol A, tannins and paraben.

### 4. Medicinal Uses (Indications) (2, 4)

- A. For sweet-taste suppression and weight loss during weight control diet program.
- B. As an adjunct therapy for diabetes (4,6,7).
- C. As an adjunct lipid lowering agent in type 2 diabetes.

### 5. Herbal preparations correlated to medicinal use (2)

1. Dried leaves (as infusion/decoction).
2. Liquid Extract (1:1).
3. Dry extract.



4. Powdered leaves.

Herbal preparations (2-4) 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

### Preparation 1

#### Indication B

#### Adults

6–60 g daily as infusion (2).

14-28 ml daily as decoction (8).

### Preparation 2

#### Indication A

1-2ml dropped onto the tongue and rinsed off, repeat every 2-3 hours as required (2, 8).

#### Indication B

3.6–11.0 ml daily (25–75 ml weekly) (2, 8).

### Preparation 3

#### Indication A

The appropriate oral dose depends on several factors such as the user's age, health and other several conditions.

#### Indication B

- 400– 600 mg daily in divided doses (standardised to contain 24% gymnemic acid (2, 6).
- 200-400 mg twice daily (4).

**Duration of use:** As directed by physician.

**Method of administration:** Oral use, with meals (2, 6).

### Preparation 3

#### Indication C

#### Adults

200-300 mg two times daily (2).

**Duration of use:** As directed by physician.

**Method of administration:** Oral use.



**Preparation 4 (9)**

**Indication C**

**Adults**

500 mg two times daily ( 1g daily)

**Duration of use:** 30 days.

**Method of administration:** Oral use.

## 7. Contraindications

Hypersensitivity to active substances and to other plants of the same family.

## 8. Special warnings and precautions for use

- If the symptoms worsen during the use of the medicinal product, a doctor or a pharmacist should be consulted.
- Gymnema might affect blood sugar levels and could interfere with blood sugar control during and after surgery. Gymnema should be stopped at least 2 weeks before a scheduled surgery (2).
- Use cautiously in diabetic patients using hypoglycaemic medications, due to possible potentiation of effects. Serum glucose levels should be monitored, and doses of concomitant hypoglycaemic drugs may require adjustment under the medical supervision. Hypoglycaemia may also occur in nondiabetic patients (10).
- Use cautiously in patients taking weight loss agents because there may be a potential for additive affects (10).
- Use cautiously in patients taking antilipemic agents. Concomitant use of gymnema with other lipid-lowering agents may potentiate their effects (10).

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

- Gymnema may potentiate the effects of hypoglycemic drugs in diabetic patients (2, 10).
- Concomitant use of gymnema with other lipid-lowering agents may potentiate their effects (10).
- Concomitant use of gymnema with antiobesity herbs and supplements, appetite suppressants, chromium, may potentiate their effects (10).
- **Lab test:** Gymnema may lead to decrease in blood glucose, glycosylated hemoglobin (HbA1c), LDL and total cholesterol (4).



## 10. Fertility, pregnancy and lactation (8)

- Contraindicated in pregnancy and lactation.
- No fertility data available.

## 11. Effects on ability to drive and use machines

No studies on the effect of *Gymnema* on the ability to drive and use machine.

## 12. Undesirable effects (4)

- Gastrointestinal symptoms (e.g. nausea, vomiting, inhibition of bitter/sweet taste), hypoglycaemia and hypersensitivity reactions.
- If adverse reactions occur, a doctor or a pharmacist should be consulted.

## 13. Overdose

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

The Indian term for *Gymnema sylvestre* is “gurmar”, which is translated as “sugar destroyer”. This is because gymnema leaves contain a compound called gymnemic acid that suppresses the taste of sugar (11).

## 16. Date of last compilation/last revision

11/06/2023.

## References

1	<a href="http://www.powo.science.kew.org">www.powo.science.kew.org</a>
2	Braun, L. and Cohen, M. (2010). Herbs and Natural Supplements - An Evidence-Based Guide. 3 <sup>rd</sup> edition, Churchill Livingstone. ISBN: 978 0 7295 3910 4.
3	Chevallier, A. (1996). The Encyclopedia of Medicinal Plants, Dorling Kindersley, London, UK.
4	Skidmore-Roth, L. Mosby's Handbook of Herbs and Natural Supplements (2010). 4 <sup>th</sup> ed. ISBN: 978-0-323-05741-7.
5	Tiwari, P., Mishra, B. N. and Sangwan, N. S. (2014). Phytochemical and pharmacological properties of <i>Gymnema sylvestre</i> : An important medicinal plant. <i>Biomed. Res. Int.</i> , article ID: 830285. doi: 10.1155/2014/830285.
6	Heinrich, M., Barnes, J., Gibbons, S. and Williamson, E. M. (2012). Fundamentals of Pharmacognosy and Phytotherapy, 2 <sup>nd</sup> edition, Elsevier Churchill Livingstone. ISBN 978-0-7020-3388-9.
7	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.
8	Duke, J. A. (2002). Handbook of Medicinal Herbs. CRC Press, 2 <sup>nd</sup> edition. ISBN9780849312847.
9	Li, Y., Zheng, M., Zhai, X., Huang, Y., Khalid, A., Malik, A., Shah, P., Karim, S., Azhar, S. and Hou, X. (2015). Effect of <i>Gymnema sylvestre</i> , <i>Citrullus colocynthis</i> and <i>Artemisia absinthium</i> on blood glucose and lipid profile in diabetic human. <i>Acta Pol. Pharm.</i> , <b>72</b> , 981– 985.
10	Ulbricht, C., Abrams, T. R., Basch, E., Davies-Heerema, T., Foppa, I., Hammerness, P., Rusie, E., Tanguay-Colucci, S., Taylor, S., Ulbricht, C., Varghese, M., Weissner, W. and Woods, J. (2011). An evidence-based systematic review of gymnema ( <i>Gymnema sylvestre</i> R. Br.) by the Natural Standard Research Collaboration. <i>J. Diet. Suppl.</i> , <b>3</b> , 311-330. doi: 10.3109/19390211.2011.597977.
11	<a href="http://www.verywellhealth.com">www.verywellhealth.com</a>