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## Phyto-Pharmacognostic review on *Passiflora* species

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### Abstract

The ability to live a healthy, disease-free life is nature's gift to humans through medicinal plants. It is essential for maintaining our health. India, one of the most medically and culturally diverse nations in the world, has a long history of using medicinal plants, and this tradition is still held in high regard today. The use of medicinal plants is thought to be significantly safer and more effective at curing a variety of illnesses. Over two thousand medicinal plants have been identified in our nation. India's tropical and subtropical regions are home to the significant medicinal plant *Passiflora incarnata*. Its therapeutic use has been documented in conventional medical systems including Ayurveda, Siddha, and Unani. According to descriptions, *P. incarnata* is a passion flower. *Passiflora* is used for the treatment of dysmenorrhea, neuralgia, and nervous tachycardia. It is a mild sedative for anxiety, sleeplessness, and restless leg syndrome. *Herb Passiflora* fruit is used to make jams, jellies, and sweets. The juice is a preferred beverage flavouring. Experimental and clinical pharmacology are both parts of *Herb Passiflorae's* pharmacology. Analgesic, antipyretic, anti-inflammatory, antibacterial, cardiovascular, central nervous system depressant, and uterine stimulating actions are all part of experimental pharmacology. Clinical pharmacology includes its impact on nausea, menopause, dysmenorrhea, and diabetes, in addition to its anxiolytic, analgesic, and sedative properties. *Herb passiflorae* is used during pregnancy because it increases uterine contractions. *Herb Passiflorae's* aqueous extract is not genotoxic. Due to the presence of *Lactobacillus* passion fruit is better suited for use by children. When consumed in reasonable doses, passion fruit is non-toxic and safe to consume daily. Adults should take 3–4 aerial parts of a sedative per day. In conclusion, *Herb Passiflora* has effects on nausea, menopause, dysmenorrhea, and diabetes in addition to its analgesic, antipyretic, anti-inflammatory, antibacterial, cardiovascular, central nervous system depressant, uterine stimulant, anxiolytic, analgesic, and sedative effects.

**Keywords:** *P. incarnata*, Krishna Kamal, Kavray – Pandav Flower, *Herb Passiflorae's*, *Passiflora species*.

### 1. Introduction

A fast-growing perennial vine with climbing or trailing stems, *Passiflora incarnata* is also known as maypop, purple passionflower, real passionflower, wild apricot, and wild passion vine. The maypop, a species of passionflower belonging to the family Passiflora, features enormous, elaborate blooms with pronounced styles and stamens. One of the toughest varieties of passionflower is grown for its fruit and eye-catching bluish-purple blossoms as well as for its wildflower appearance in the southern United States. The fruit of *Passiflora incarnata* has several seeds, each encased in an aril that contains a drinkable juice that can be drunk directly or added to processed goods.

The climbing vine known as the passion flower (*Passiflora incarnata*) has white and purple blossoms. The constituents of passion flower are releasing. South and Central America, as well as the Southeast United States, are the original homes of the passion flower. It has long been used to promote sleep. Passion flower is used by people to treat anxiety, particularly anxiety before surgery. For a variety of problems, including pain, ADHD, sleeplessness, and stress, some people also use passion flower. However, there isn't any reliable scientific data to back up these uses. Passion flower is used as a flavoring in several dishes and drinks.

**Mythological conviction**

This flower is also referred to as the Mahabharata Flower or Krishna Kamal in India.

This lovely purple blossom contains the entire "Mahabharata" epic's narrative. Every aspect of the flower is just different and lovely, including the colour, shape, aroma, and leaves. Each of the 100 Kauravas is symbolised by one of the about 100 purple petals.

Each of the five yellow petals in the centre stands for one of the Pandavas.

The queen of the five Pandavas, Draupadi, is symbolised by the green lightbulb in the centre.

The sacred trinity of the three major gods, Brahma, Vishnu, and Shiva, is symbolised by the three strands. The Sudarshan chakra, Lord Vishnu's sacred weapon, is the radial in the centre. Of the 10 manifestations of Lord Vishnu, Lord Krishna. (Shown in fig no 1 and 2)

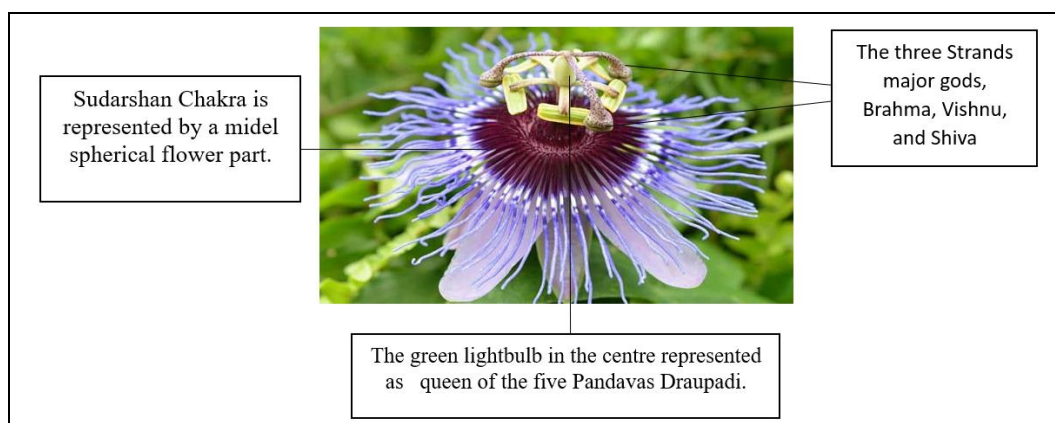
Significant significance is attached to Krishna Kamal in both Christianity and Hinduism.

**Christianity**

Since the corona of the flower resembles the crown of thorns that Christ wore during his crucifixion, the passion flower is a symbol of suffering in Christianity.



**Fig 1:** Passion Flower



**Fig 2:** Passion Flower

**Types**

The variety of hues, dimensions, and forms available in passionflowers is astounding. The *Passiflora* genus contains approximately 700 recorded cultivars, the majority of which are hybrids, and close to 600 identified species. While most grow as vines, some even develop in a way that resembles trees. Although the ripe fruit of the majority of domesticated species is technically edible, most of them have an unpleasant flavor.

Unripe fruits and foliage should not be consumed because they contain poisonous cyanic glycosides. The species and cultivars described below should only be planted for ornamental purposes, unless otherwise specified.

**Some species that are well-known include the following:****Blue- *P. caerulea***

*P. caerulea* is a South American native and the symbol of

Paraguay. It has been bred with numerous other types to produce cherished hybrids. The blue, white, and burgundy filaments on the flower petals give them a cream color. A blue *Passiflora caerulea* flower growing in a garden is seen in close-up on a horizontal background with soft focus. The plant has produced some famous hybrids and cultivars, including "Constance Elliott," "Pretty Tina," "Snow Queen," "Susanne," and "Diva." A *Passiflora caerulea* bloom is shown in close-up on a soft-focus background. The blue passionflower is also used medicinally in the following ways: A concoction made from the leaves or roots is beneficial against gastrointestinal symptoms and infections (such as dysentery) because the plant's compounds include anti-inflammatory and anti-diarrheal properties. The fruit is also good for digestion when eaten uncooked.



Fig 3: *P. caerulea*

#### Blue Bouquet

Purple Rose Hybrid Due to its distinctive purple, almost blue flowers with white and magenta rings at the centre, "Blue Bouquet" is incredibly well-liked. It is a vigorous bloomer,

and during the summer, the 30-foot vines will be completely covered in three-inch flowers. It still resembles *P. caerulea*, one of its parents. Medicinally active as - *P. caerulea*.



Fig 4: Blue Bouquet

#### *P. alata*

The winged-stem passionflower (*P. alata*), unlike its relatives, has vivid red petals with purple and white corona filaments that do not fully unfold. They remain partially closed around the anthers instead. The winged-stem passionflower's red and purple flowers are seen in close-up on a horizontal

background with soft focus. It has a strong fragrance, and the fruits are among the best-tasting in the entire genus. Folk medicine uses the leaves, flowers, roots, and fruits of wild and domesticated species to cure sleeplessness, anxiety, and helminthic infections.



Fig 5: *P. alata*

#### *P. coccinea*

The blood-red and white filaments of the scarlet passionflower (*P. coccinea*) are attached to long, velvety, bright red petals. The size of the blossoms can reach four inches. This species doesn't mind getting some sun. Even without complete sun exposure, your flowers will still put on a colorful display. The hybrids "Cordelia," "Hot Shot,"

"Sherry," and "Wil" are notable examples. For issues with sleep (insomnia), anxiety, adjustment disorder, indigestion, pain, fibromyalgia, muscle cramps, and diarrhoea, as well as for easing withdrawal symptoms from narcotic drugs and lowering anxiety and uneasiness before surgery, flower is taken orally.



**Fig 6:** *P. coccinea*

### *P. suberosa*

It is a perennial, up to 6-metre-long liana that climbs or creeps. Its bottom portion bears suberosous, puberulent, or glabrous stems. Simple, alternating, whole to trilobed, glabrous on both sides, and glossy green are the characteristics of the leaves. They range in size from 4 to 12 centimetres in length when elliptical to up to 5 cm long and 7 cm wide when deeply lobed, with sharp lobes, a base that is rounded to truncated, and pubescence ranging from glabrous to pubescent. Petioles are between 0.5 and 4 centimetres long, with a pair of prominent and stipitate glands in the top half and line stipules. The plant is renowned for having a wide range of leaf sizes and shapes on a single plant. Another well-



**Fig 7:** *P. suberosa*

### Beautiful 'Lady Margaret'

It is a cross between *P. coccinea* and *P. incarnata*. She has lengthy, raspberry-red petals, just like her red dad. The corona has a dazzling white centre surrounded by long, wavy filaments that are purple and have white and magenta streaks.



**Fig 8:** Beautiful 'Lady Margaret'

### *P. edulis* / Purple Granadilla

It would be worthwhile to plant Purple Granadilla (*P. edulis*) just for the flowers, which have pretty coiled purple and white filaments over snowy white petals. However, the blossom is one of the best choices for developing edible fruit because it gives rise to a berry that is relatively large. It is the sole

species simply referred to as "passion fruit." A tropical fruit in the Passifloraceae family is the passion fruit (*Passiflora edulis*). Passion fruit is a South American native that has been extensively utilized in folk medicine there to cure ailments like sleeplessness, bronchitis, asthma, and urinary infections.



**Fig 9:** *P. edulis* (Purple Granadilla)

***P. vitifolia***

The fruit of the fragrant passionflower, *P. vitifolia*, gave the plant its name, but there's a catch the fruit is really sour when it comes off the plant. However, if allowed to ripen for a few weeks, it turns into a sweet strawberry-like fruit. The flower's long, lanceolate petals are a vivid red, and its short red and white filaments do not expand up against the petals; instead, they remain upright.



**Fig 10:** *P. vitifolia*

***P. foetida***

*P. foetida* only stinks if you disturb the flowers. The bad news is that this plant has spread like wildfire over the world's tropical areas. It's still a useful species to have around if you can keep it under control (try container planting!). Beautifully rounded white petals and white filaments with a maroon ring at the centre are its main features. 'Alba' and 'Aurora' are two distinctive hybrids.



**Fig 11:** *P. foetida*

***P. incarnata***

It is native of North America, is a contributing factor in many of the hybrids. A horizontal close-up of purple passionflowers growing in a garden with background vegetation. It has filaments with a little white ring and pale purple petals. It looks bizarre and alien because the ends of the filaments are pinched. Frequently, the plant will only be sold under its species name or as "maypop. This species are widely uses for its medicinal benefits such as Sleeplessness, Anxiety, etc.



**Fig 12:** *P. incarnata*

***Passiflora arizonica***

A species of flowering plant belonging to the genus *Passiflora* is called *Passiflora arizonica*, also known as the Arizona passionflower. It is a perennial vine that climbs. It is indigenous to the Sonoran Desert in southwest Arizona and northwest Mexico. It flourishes in desert grasslands and has striking white-purple flowers. medicinally used for ailments like sleeplessness, bronchitis, asthma etc.



**Fig 13:** *Passiflora arizonica*

***P. citrina***

The *P. citrina* plant was first described by American botanist John M. MacDougal in 1991. In Honduras, he discovered this variety of passionflower blooming untamed. Due to its ability to bloom for up to 10 months out of the year, this small plant is typically kept as a houseplant. It features tiny yellow bloom.



**Fig 14:** *P. citrina*

***Passiflora tenuifila***

The climbing plant *Passiflora tenuifila* has a perennial rootstock. It produces tendril-supported annual to perennial stems that clamber into other plants or scramble over the ground.

Although it is not particularly appreciated locally, the edible fruit is collected from the wild and eaten there. Some, if not all, of the species in this genus have a compound called "passiflorina" in their leaves and roots that acts as an efficient tranquillizer and resembles morphine. Although we don't know much about this species, several species are used in herbal infusions to soothe the nerves and promote deep sleep. Numerous species' leaves are also thought to be diaphoretic, anthelmintic, and antihysteretic. Brazil employs them to combat pest.



Fig 15: *Passiflora tenuiflora*

### *P. antioquiensis*

Some of the largest flowers in the genus, measuring up to six inches across, are seen on the vanilla passionfruit, *P. antioquiensis*. petals of vivid fuchsia-red with little purple corollas. The fruits are nearly shaped like bananas and are long and green. Some, if not all, of the species in this genus have roots and leaves that are rich in a compound called "passiflorina," which is comparable to morphine and is a potent tranquillizer. Although we don't know much about this species, several species are used in herbal infusions to soothe the nerves and promote deep sleep. Numerous species' leaves are also thought to be diaphoretic, anthelmintic, and antihysterical. They are applied in Brazil to treat erysipelas, cutaneous inflammations, and transient fevers.

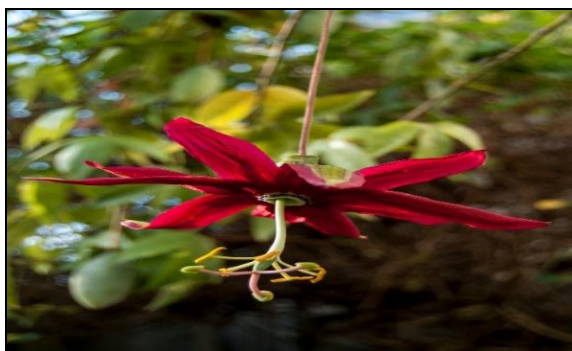


Fig 16: *P. antioquiensis*.

### Other Species

The *Passiflora* plant species that have been identified are listed below in alphabetical order. (\*Indicate rare, endangered species or species that are protected.)

#### A

1. *Passiflora actinia* Hook. <sup>[1]</sup> –
2. *Passiflora acuminata* DC.
3. *Passiflora adenophylla* Mast.
4. *Passiflora adenopoda* DC.
5. *Passiflora adulterina* L. fil.
6. *Passiflora affinis* Engelm.
7. *Passiflora aimae* Annonay & Feuillet
8. *Passiflora alata* Curtis \*
9. *Passiflora amethystina* J. C. Mikan
10. *Passiflora amicornum* Wurdack
11. *Passiflora amoena* L. K. Escobar
12. *Passiflora ampullacea* Harms\*
13. *Passiflora anadenia* Urb.
14. *Passiflora anastomosans*
15. *Passiflora andersonii* DC.
16. *Passiflora auriculata* Kunth\*

17. *Passiflora andina* (H. Karst.) Killip
18. *Passiflora andreana* Mast.
19. *Passiflora anfracta* Mast. & André
20. *Passiflora angusta* Feuillet & J. M. MacDougal
21. *Passiflora antioquiensis* H. Karst
22. *Passiflora apetala* Killip
23. *Passiflora apoda* Harms
24. *Passiflora araguensis* L. K. Escobar
25. *Passiflora araujoii* Sacco
26. *Passiflora arbelaezii* L. Uribe
27. *Passiflora arborea* Spreng.
28. ‡ *Passiflora arida* (Mast. & Rose) Killip
29. *Passiflora aristulata* Mast.
30. *Passiflora arizonica* (Killip) D. H. Goldman
31. *Passiflora ascidia* Feuillet
32. ♂ *Passiflora aurantia* G. Forst. \*

#### B

1. *Passiflora bacabensis* Mezzonato, Silva & Oliveira
2. *Passiflora bahamensis* Britton
3. *Passiflora bahiensis* Klotzsch
4. *Passiflora balbis* Feuillet
5. *Passiflora barclayi* (Seem.) Mast.
6. *Passiflora baueri* (Lindl.) Mast
7. *Passiflora bauhiniifolia* Kunth
8. *Passiflora bernaccii* Mezzonato
9. *Passiflora berteriana* Balb. ex DC.
10. *Passiflora bicornis* Mill.
11. *Passiflora bilobata* Juss.
12. *Passiflora boenderi* J. M. MacDougal
13. *Passiflora bogotensis* Benth
14. *Passiflora boticarioana* Cervi
15. *Passiflora brachyantha* L. K. Escobar
16. *Passiflora bracteosa*
17. *Passiflora brevifila* Killip
18. *Passiflora bryonioides* Kunth – cupped passion flower
19. *Passiflora bucamangensis* Killip
20. *Passiflora buchtienii* Killip

#### C

1. *Passiflora cacao* Bernacci & M. M. Souza
2. *Passiflora caerulea* L. – blue passion flower, common passion flower
3. *Passiflora campanulata* Mast.
4. *Passiflora candida* (Poepp. & Endl.) Mast.
5. *Passiflora candollei* Triana and Planch.
6. *Passiflora canescens* Killip
7. *Passiflora cappariifolia* Killip
8. *Passiflora capsularis* L. – red granadilla
9. *Passiflora cardonae* Killip
10. *Passiflora castellanosi* Sacco
11. *Passiflora catharinensis* Sacco
12. *Passiflora cauliflora* Harms
13. *Passiflora cerasina* Annonay & Feuillet
14. *Passiflora ceratocarpa* F. Silveira
15. *Passiflora cervii* M. L. Milward de Azevedo
16. *Passiflora chaparensis* R. Vásquez
17. *Passiflora chelidonea* Mast.
18. *Passiflora chlorina* L. K. Escobar
19. *Passiflora chocoensis* G. Gerlach & Ulmer
20. *Passiflora crispolanata* L. Uribe
21. *Passiflora cryptopetala* Hoehne
22. *Passiflora cuatrecasasii* Killip
23. *Passiflora cubensis* Urb.
24. ‡ *Passiflora cumbalensis* (H. Karst.) Harms

25. *Passiflora cuneata* Willd.
26. ✕ *Passiflora cupiformis* Mast.
27. *Passiflora cupraea* L.
28. *Passiflora cuspidifolia* Harms
29. *Passiflora cuzcoensis* Killip
30. *Passiflora cyanea* Mast.
31. *Passiflora cobanensis* Killip
32. *Passiflora coccinea* Aubl. – Red granadilla
33. *Passiflora cochinchinensis* Spreng.
34. *Passiflora cocuyensis* M. Molinari
35. *Passiflora colimensis* Mast. & Rose ex Rose
36. *Passiflora colinvauxii* Wiggins
37. *Passiflora colombiana* L. K. Escobar
38. *Passiflora compar* Feuillet
39. *Passiflora complanata*
40. *Passiflora contracta* Vitta
41. *Passiflora conzattiana* Killip
42. *Passiflora cookii* Killip
43. *Passiflora cordistipula* Cervi
44. *Passiflora coriacea* Juss.
45. *Passiflora cornuta* Mast.
46. *Passiflora costaricensis* Killip
47. *Passiflora costata* Mast.
48. *Passiflora crassifolia* Killip
49. *Passiflora cremastantha* Har
50. *Passiflora crenata* Feuillet & Cremera
51. *Passiflora choconiana* S. Watson
52. *Passiflora chrysophylla* Chodat
53. *Passiflora chrysosepala* Schwerdtf.
54. *Passiflora ciliata* Aiton – fringed p
55. *Passiflora cincinnata* Mast.
56. ✕ *Passiflora cinnabarina* Lindl.
57. *Passiflora cirrhiflora* A. Juss.
58. *Passiflora cirrhipes* Killip
59. *Passiflora cissampeloides* J. M. MacDougal
60. *Passiflora citrifolia* Salisb.
61. *Passiflora citrina* J. M. MacDougal – lemon-yellow passion flower
62. *Passiflora clathrata* Mast.
63. *Passiflora clypeophylla* Mast
64. *Passiflora coactilis* Killip

**D**

1. *Passiflora dalechampioides* Killip
2. *Passiflora dasyadenia* Urb.
3. *Passiflora dawei* Killip
4. *Passiflora deficiens* Mast.
5. *Passiflora deidamioides* Harms
6. *Passiflora deltoifolia* Holm-Niels. & J. E. Lawesson
7. *Passiflora dictamo* DC.
8. *Passiflora dioscoreifolia* Killip
9. *Passiflora discophora* P. Jørg. & J. E. Lawesson\*
10. *Passiflora dispar* Killip
11. *Passiflora dolichocarpa* Killip

**E**

1. ✕ *Passiflora eberhardtii* Gagnep.
2. *Passiflora edmundoi* Sacco
3. † *Passiflora edulis*
4. *Passiflora eggersii* Harms
5. *Passiflora eglandulosa* J. M. MacDougal
6. *Passiflora eichleriana* Mast.
7. *Passiflora ekmanii* Killip & Urb.
8. *Passiflora elegans* Mast.
9. *Passiflora elliptica* Gardner

10. *Passiflora emarginata* Bonpl.
11. *Passiflora engleriana* Harms
12. *Passiflora ernestii* Harms
13. *Passiflora erythrophylla* Mast.
14. *Passiflora escobariana* J. M. MacDougal
15. *Passiflora eueidipabulum* S. Knapp & Mallet
16. *Passiflora exoperculata* Mast.
17. *Passiflora exsudans* Zucc.
18. *Passiflora exura* Feuillet

**F**

1. *Passiflora fanchonae* Feuillet
2. *Passiflora farneyi* Pessoa & Cervi
3. *Passiflora faroana* Harms
4. *Passiflora fernandezii* L. K. Escobar
5. *Passiflora ferruginea* Mast.
6. *Passiflora filamentosa* Cav.
7. *Passiflora filipes* Benth
8. *Passiflora fimbriatistipula* Harma
9. *Passiflora flexipes* Triana and Planch.
10. ‡ *Passiflora foetida* L. – stinking passion flower
11. *Passiflora frutescens* Ruiz & Pav. ex Killip
12. *Passiflora fruticosa* Killip
13. *Passiflora fuchsiiflora* Hemsl.

**G**

1. *Passiflora galbana* Masters
2. *Passiflora gardneri* Masters
3. *Passiflora gibertii* N. E. Br.
4. *Passiflora glandulosa* Cav. \*
5. *Passiflora goniosperma* Killip
6. *Passiflora gracillima* Killip
7. *Passiflora guatemalensis* S. Wats.

**H**

1. *Passiflora haematostigma* Mast.
2. *Passiflora hahnii* Mast.
3. *Passiflora harlingii* Holm-Niels.
4. *Passiflora henryii* Hemsl.
5. *Passiflora herbertiana* Ker Gawl. – native passionfruit
6. *Passiflora hirtiflora* P. Jørg. & Holm-Niels.
7. *Passiflora hollrungii* K. Schum.
8. *Passiflora holosericea* L.
9. *Passiflora hyacinthiflora* Planch. & Linden

**I**

1. *Passiflora incarnata* L. – maypop, purple passion flower, ocoee (Cherokee)
2. *Passiflora indecora* Kunth
3. *Passiflora insignis* Hook.
4. *Passiflora ita* Mezzonato, R. S. Ribeiro & Gonella

**J**

1. *Passiflora jamesonii* L. H. Bailey
2. *Passiflora jatunsachensis* M. Schwerdtfeger
3. *Passiflora jiangfengensis* S. M. Hwang and Q. Huang
4. *Passiflora jorgeana* Mezzonato
5. *Passiflora jorullensis* Kunth.
6. *Passiflora jugorum* W. W. Sm.
7. *Passiflora Juliana*

**K**

1. *Passiflora kermesina* Link & Otto
2. *Passiflora kuranda* Krosnick

3. *Passiflora kwangtungensis* Merr.**L**

1. *Passiflora lanata* Poir.
2. *Passiflora lancifolia*
3. *Passiflora lauana* J. M. MacDougal
4. *Passiflora laurifolia* L. – water lemon, Jamaican honeysuckle
5. *Passiflora leschenaultii* DC.
6. *Passiflora ligularis* A. Juss. – sweet granadilla
7. *Passiflora linda* Panero\*
8. *Passiflora lindeniana* Planch. ex Triana & Planch.
9. *Passiflora loefgrenii* Vitta
10. *Passiflora lorenziana* Mezzonato & Bernacci
11. *Passiflora loxensis* Killip & Cuatrec.
12. *Passiflora lutea* L. – yellow passion flower
13. *Passiflora luzmarina* P. Jørg.

**M**

1. *Passiflora macdougaliana* S. Knapp & J. Mallet
2. *Passiflora macfadyenii*
3. *Passiflora macrophylla* Spruce ex Mast. – tree passion flower
4. *Passiflora macvaughiana*
5. † *Passiflora maliformis* L. – sweet calabash
6. *Passiflora manicata* (Juss.) Pers.
7. *Passiflora membranacea* Benth.
8. *Passiflora menispermifolia* Kunth
9. *Passiflora microstipula* L. E. Gilbert & J. M. MacDougal
10. *Passiflora miersii* Mast. \*
11. *Passiflora miniata* Vanderpl.
12. *Passiflora misera* Kunth
13. ‡ *Passiflora mixta* L. f.
14. ♂ *Passiflora moluccana* Reinw. ex Blume
15. *Passiflora monadelphina*
16. *Passiflora montana*\*
17. *Passiflora morifolia* Mast.
18. *Passiflora mucronata* Lam.
19. *Passiflora multiflora* L. – white flower passionflower
20. *Passiflora murucuja* L.

**N**

1. *Passiflora napalensis* Wall.
2. ‡ *Passiflora nitida* Kunth. – bell apple

**O**

1. *Passiflora obtusifolia*
2. *Passiflora odontophylla* Harms ex Glaz.
3. *Passiflora oerstedii* Mast.
4. *Passiflora organensis* Gardner
5. *Passiflora ovalis* Vell.

**P**

1. *Passiflora palenquensis* Holm-Nielsen & Lawesson
2. *Passiflora pallens* Poepp. ex Masters– pineland passionflower
3. *Passiflora pallida*
4. ♂ *Passiflora papilio* H. L. Li
5. *Passiflora pardifolia* Vanderpl.
6. *Passiflora pectinata* Griseb.
7. *Passiflora penduliflora* Bert. ex DC.
8. ♂ *Passiflora perakensis* Hallier f.
9. ‡ *Passiflora pergrandis* Holm-Nielsen & Lawesson
10. *Passiflora picturata* Ker Gawl.
11. *Passiflora pilosa* Ruiz & Pavon ex DC.

12. *Passiflora pinnatistipula* Cav.
13. *Passiflora pittieri* Mast. \*
14. *Passiflora platyloba* Killip
15. *Passiflora pohlii* Mast.
16. *Passiflora popenovii* Killip
17. *Passiflora punctata* L.
18. *Passiflora purii* Mezzonato, Lima

**Q**

1. *Passiflora quadrangularis* L. – giant granadilla, giant tumbo, badea
2. *Passiflora quetzal* J. M. MacDougal

**R**

1. *Passiflora racemosa* Brot.
2. *Passiflora reflexiflora* Cav. \*
3. *Passiflora retipetala* Mast.
4. *Passiflora rhamnifolia* Mast.
5. *Passiflora roseorum* Killip
6. *Passiflora rubra* L.
7. *Passiflora rupestris* Bernacci, Mezzonato & Salimena

**S**

1. *Passiflora sanctae-barbarae* Holm-Nielsen & Jørgensen
2. *Passiflora sanguinolenta* Mast.
3. ‡ *Passiflora schlimiana* Triana & Planch.
4. ‡ *Passiflora seemannii* Griseb.
5. *Passiflora sexocellata*
6. *Passiflora sexflora* Juss. – goatsfoot
7. *Passiflora serratifolia* L.
8. ‡ *Passiflora serratodigitata* L.
9. *Passiflora setacea* DC.
10. ♂ *Passiflora siamica* Craib
11. *Passiflora sicyoides* Schlecht. & Cham.
12. *Passiflora smilacifolia* J. M. MacDougal
13. *Passiflora sodiroi* Harms
14. *Passiflora speciosa* Gardner
15. *Passiflora sprucei* Mast.
16. *Passiflora suberosa* L. – corky-stemmed passion flower
17. *Passiflora subpeltata* Ortega – white passion flower
18. *Passiflora subpurpurea* Jørgensen & Holm-Nielsen
19. ♂ *Passiflora sumatrana* Blume

**T**

1. † *Passiflora tarminiana*
2. *Passiflora telesiphe* Knapp & Mallet
3. ♂ *Passiflora tetrandra*
4. *Passiflora tenuifila* Killip
5. *Passiflora tenuiloba*
6. *Passiflora tica* Gómez-
7. ♂ *Passiflora tonkinensis*
8. *Passiflora trialata* Feuillet & J. M. MacDougal
9. *Passiflora tricuspis* Mast.
10. *Passiflora tridactylites*
11. *Passiflora trifasciata* Lem.
12. *Passiflora trinervia* (Juss.) Poir
13. *Passiflora trinifolia*
14. *Passiflora tripartita* (Juss.) Poir
15. *Passiflora tripartita* var. *mollissima*
16. *Passiflora trisecta* Mast.
17. *Passiflora trochlearis* Jørgensen
18. *Passiflora tulae* Urb.

**U**

1. *Passiflora ulmeri* Schwerdtfeger



- 2. *Passiflora umbilicata* (Griseb.) Harms
- 3. *Passiflora urbaniana* Killip

**V**

- 1. *Passiflora velozii* Gardner
- 2. *Passiflora viridescens* L. K. Escobar
- 3. *Passiflora viridiflora*
- 4. † *Passiflora vitifolia* Kunth

**W**

- 1. *Passiflora watsoniana* Mast.
- 2. *Passiflora weberbaueri* Harms

- 3. *Passiflora weigendii* Ulmer & Schwerdtf.
- 4. *Passiflora wilsonii* Hemsl.

**X**

- 1. *Passiflora xiikzodz*
- 2. ✕ *Passiflora xishuangbannaensis* Krosnick

**Y**

- 1. *Passiflora yucatanensis* Killip

**Z**

- 1. *Passiflora zamorana* Killip\*

Some endangered species of *Passiflora* or species that are protected shown below



**Fig 17:** *Passiflora ampullacea* Harms\*



**Fig 18:** *Passiflora aurantia* G. Forst. \*



**Fig 20:** *Passiflora glandulosa* Cav. \*



**Fig 19:** *P. discophora*



**Fig 21:** *Passiflora linda* Panero\*



Fig 22: *Passiflora miersii* Mast\*



Fig 23: *Passiflora reflexiflora* Cav. \*



Fig 24: *P. jorullensis*



Fig 25: *P. auriculata*



Fig 26: *Passiflora zamorana* Killip\*

### Passiflora plants with hybrids in horticulture-

*Passiflora* × *alatocaerulea*

*Passiflora* × *belotii*

*Passiflora* × *decaisneana*

*Passiflora* × 'incense'

*Passiflora* × *kewensis*

*Passiflora* × *violacea*

### *Passiflora incarnata*

More people are familiar with *Passiflora incarnata* than with the other species. Alkaloids, phenols, glycosyl flavonoids, and cyanogenic chemicals are only a few of the many substances found in *Passiflora*. It has shown promise in several studies as a treatment for conditions like anxiety, opiate withdrawal, sleeplessness, attention-deficit/hyperactivity disorder, and cancer.

### Common names

English – Passion flower, Apricot, Maypop.

Hindi – Krishna kamal, Kavrav pandav, Krishna Priya Pushp.

Marathi – Krishna kamad

### Cultivation

The *Passiflora incarnata* is an easily grown, low-maintenance garden plant that can be trained to beautify fences and arbours in its native area and origin. Wild maypop is an invasive vine that is endemic to the southeastern United States and spreads into Ohio, Illinois, and Indiana in the centre of the country. In days, the vines can cover the thicket's floor if the weather is good. The plants require direct sunlight for at least half of each day in order to develop and thrive. Although *P. incarnata* grows best in well-drained soils, the plants may also withstand periodically wet and acidic soils. Plants can withstand droughts very well. *P. incarnata* can be planted year-round in hardiness zones 6–11. *P. incarnata* can be planted year-round in hardiness zones 6–11. Between two plants, there is a distance of 36 to 60 inches (91.44 to 152.4 cm) [7]. It takes those one to two years before they may start bearing. Each blossom only lasts for one day on average. The fruit then grows after two to three months [8]. The yield varies depending on the plant's age and vine size, however one report indicated 10–20 fruits per vine. After the fruit has started to shrivel in the autumn, seeds can be harvested. The culture of *P. incarnata* has some issues with nematodes and caterpillars.

The flowers might draw ruby-throated hummingbirds and seem suited for carpenter bee pollination. The pollen-filled blossom attracts hummingbirds and bees as they search for nectar. The plant *Passiflora incarnata* may develop into a weed in farming. According to reports, the *Passiflora* genus, which was formerly used for agricultural purposes, is a significant weed in some parts of the world. According to the US Department of Agriculture, the following publications refer to *P. incarnata* as a weed: Weeds of the United States and Canada and Weeds of Kentucky.

It is recommended to use mechanical management, such as routine sucker removal, to stop the spread of maypop. To prevent further growth, it is also advised to train the vines to grow on trellises and fences. (European Pharmacopoeia, C. 2001, Wichtl *et al.*, 1994) [23, 24].

### Taxonomy

**Kingdom:** Plantae

**Clade:** Tracheophytes

**Clade:** Angiosperms

**Clade:** Eudicots  
**Clade:** Rosids  
**Order:** Malpighiales  
**Family:** Passifloraceae  
**Genus:** Passiflora  
**species:** *P. incarnata*

### Morphological Study

An herbaceous perennial vine that can grow up to 6 1/2 feet long and has unusual three-lobed leaves and pretty blossoms. Passion flower is typically found on the margins of fields and woods, but it is starting to show up in more Virginian agronomic crops, particularly where conservation tillage is used.

### Roots

Initially forming as a taproot, roots eventually establish a deeply ingrained perennial rootstock from which sprouts can grow.

### Leaves

Alternately arranged along the stem, typically with very little hair. Each individual leaf has three (rarely five) lobes that branch out from the same place (palmately lobed). Petioles have leaves that range from 2 1/2 to 5 1/2 inches long and broad. At the intersection of the petiole and the base of the leaf blade, there are two nectar-filled glands.

### Stems

Stem have the ability to climb other plants or trail along the ground. Typically only mildly hairy, stems can grow up to 6 1/2 feet in length.

### Flowers

The space between the stem and the leaf petioles gives rise to solitary flowers. Flowers are quite lovely and range in length from 2 to 4 inches. They are light purple to lavender in color.

### Fruit

a green or yellowish-green berry that is fairly large (1 1/2-3 inches long). Reticulate seed, or dark brown "dimpled" seed, is abundant in berries.

### Chemical compounds

The flavonoids (0. 25%), such as vitexin, isovitexin, orientin, isoorientin, apigenin, kaempferol, and quercetin, are the primary chemical components of the passion flower. the beta-carboline ring system-based indole alkaloids (0. 1%) harman, harmin, harmalin, harmol, and harmalol Other isolated plant components, including glycosides, sugars, amino acids, benzopyrones, cyanogenic glycosides like gyanocardin, and pyrone derivatives such as maltol and ethyl maltol, have been found. Chrysin and the tri-substituted benzoflavone moiety (BZF), two significant components, have been identified. Yellow-purple (*Passiflora*) passion fruits were used to determine the enantiomeric compositions of the acetates, butanoates, hexanoates, and octanoates of the secondary alcohols 2-pentanol, 2-heptanol, and 2-nonanol. Through the use of simultaneous distillation and extraction, the chemicals were separated.

### Safety

Unbloomed young flower According to a 2013 evaluation of the literature, the herb "has a good safety profile." According to one study, using a dried alcoholic extract daily for 8 weeks

to treat anxiety at 800 mg seemed safe. Passionflower is a natural flavouring agent that is used in the production of food and is generally regarded as safe (GRAS). Additionally, *P. incarnata* is listed as an animal feed ingredient in the European Register of Feed Additives.

### Pharmacological Activity

#### Anti-inflammatory

Animals receiving an intragastric injection of 75 to 500 mg/kg bw of Herb *Passiflora* ethanol extract experience a reduction in inflammation one hour later. Herb *Passiflora* has anti-inflammatory and antioxidant properties that can be used to cure and prevent numerous diseases, including intricate inflammatory processes. The volume of granulomas brought on by the implantation of cotton pellets is reduced by 16–20% in mice when given a dose of 500 mg/kg bw of Herb *Passiflora* ethanol extract. After a dose of 500 mg/kg bow of Herb *Passiflora* ethanol extract, it was discovered that total leukocyte passage to the animal pleural cavity had decreased by 40%. This outcome was brought about by a decline in the movement of polymorphonuclear and mononuclear leukocytes. These outcomes were equivalent to acetylsalicylic acid at 250 mg/kg Bw. (Borrelli, F *et al.*, *et al.* 1994, Guerin, J. C *et al.*, 1985) <sup>[11, 30]</sup>.

#### Analgesic activity

*Passiflora incarnata*'s analgesic effects are comparable to those of *Cupressus sempervirens*. The amounts of the myeloperoxidase enzyme and neutrophil infiltration both decrease when *Passiflora subpeltata* Ortega is present. The enzymatic antioxidants superoxide dismutase, catalase, glutathione, and lipid peroxidation are under the control of *Passiflora subpeltata* Ortega. The generation of tumour necrosis factor and nitric oxide was decreased by *Passiflora subpeltata* Ortega extract. As a result, Ortega's *Passiflora subpeltata* relieves inflammatory bowel disease. (Shanmugam, *et al.*, 2020) <sup>[55]</sup>.

#### Antitussive Activity

When mice were exposed to sulphur dioxide, the leaves of *P. incarnata* showed considerable antitussive action, with cough induction comparable to that of codeine phosphate. (Dhawan K *et al.*, 2003) <sup>[20, 36]</sup>.

#### Anti-bacterial

The growth of the following fungi was not inhibited by the 50% ethanol extract of Herb *Passiflora* over 500 mg/ml: *Botrytis cinerea*, *Aspergillus fumigatus*, *Rhizopus nigricans*, *Fusarium oxysporum*, *Penicillium digitatum*, and *Candida albicans*. *Helicobacter pylori*'s growth was inhibited by a methanol extract of Herb *Passiflora* with a minimum inhibitory concentration of 50 g/ml. *Chromobacterium violaceum*, a gramme-negative and anaerobic bacterium linked to uncontrollable human infections, is treated by *Passiflora edulis* ethyl ester. The aqueous extract of *Passiflora cincinnata* has a mild inhibitory impact against lactic acid bacteria as well as an inhibitory effect against multidrug-resistant *Staphylococcus aureus* and *Listeria* spp. Passion fruit seeds contain volatile substances that are poisonous to 1-octanol and *Meloidogyne incognita*. The nematocidal impact of these substances is active against *Meloidogyne incognita*. (Borrelli, F *et al.*, 1996) <sup>[11]</sup>.

#### Cardiovascular effect

An animal heart treated in an *in vitro* investigation with a

30% ethanol extract of the herb *Herb Passiflora* had stronger cardiac muscle contractions. The animals' blood pressure was unaffected by the *Herb Passiflora* extract dose of 0.05 ml/kg bw. Administration of *Passiflora setacea* decreased insulin levels while increasing high-density lipoprotein levels. The level of interleukin (IL)-17A is unaffected by the ingestion of *Passiflora setacea*. Following administration of *Passiflora setacea*, nutrigenomic investigations found 1327 genes that were differentially expressed, including altered genes related to inflammation, cell adhesion, or cytokine-cytokine receptors. Therefore, using *Passiflora setacea* protects against cardiometabolic illnesses. (Leslie, *et al.*, 1978, Duarte, *et al.*, 2020) [44, 21].

### Anti-Depasant

Animals receiving a 25 mg/kg bw intraperitoneal injection of the *Herb Passiflora* water extract showed decreased organisation and locomotion. Furthermore, the animals' motor activity was unaffected by the *Herb Passiflora* dose described earlier. Animals receiving a dosage of 60–250 mg/kg bw of an extract made from 30% or 40% ethanol stop moving around. The 40% ethanol extract dose of 60 mg/kg bw increased the duration of sleep, while the dose of 50 mg/kg bw decreased the onset of seizures. The conflict test, the light/dark box choice technique, and the staircase test were used on animals to assess the effects of water extract or 30% ethanol extract of *Herb Passiflora*. 100 mg/kg body weight, 200 mg/kg body weight, and 400 mg/kg body weight or 800 mg/kg bw in comparison to the control, which received standard saline administration. After ingesting 400 mg/kg and 800 mg/kg of *Herb Passiflora*, the water extract showed decreased motor activity in both the stair and free exploratory tests. The water extract also made sleep last longer. In these studies, the 30% *Herb Passiflora* ethanol extract had no impact, but at 400 mg/kg, it increased the animals' mobility and had anxiolytic effects. *Herb Passiflora* water extract given to mice at a dose of 160–250 mg/kg bw decreased convulsions, prolonged sleep, and reduced motor movement. Rats received a daily dose of 5 g/kg B w of a 30% ethanol extract of the herb *Herb Passiflora* for three weeks; however, there was no change in body weight, rectal temperature, tail flicking, or motor organization. Furthermore, the treated animals supported decreased motor activity. The treated animals' electroencephalographic parameters remained unaltered. Animals given 800 mg/kg body weight of *Herb Passiflora* ethanol extract did not experience any changes in their ability to move or sleep, however. According to an *in vitro* investigation, chrysin has a high affinity for benzodiazepine receptors and decreases animal locomotion after a dose of 30 mg/kg bw. Chrysin increased the hypnosis brought on by pentobarbital at the same dose. (Ruggy G. H *et al.*, 1940, Medina, *et al.*, 1990 Speroni, E *et al.*, 1996) [52, 46, 60-61]

### Effect of uterine stimulants

*In vitro*, *Herb Passiflora* water extract (1 mol/l) strongly induces contractions in the uterus of non-pregnant mice. Furthermore, the isolated uterus of pregnant mice did not experience contractions when *Herb Passiflora* water extract (1-2 mol/l) was administered. (Pilcher, J. *et al.*, 1918) [49].

### Impact of sedation

Sedative properties are present in passion flower. As herbal sedatives, *Passiflora incarnata* L. aerial components are extracted into water. There is a lot of evidence that *Passiflora*

herba has a sedative effect. The plants' ability to reduce anxiety is established. The phytotherapy of tension, restlessness, and irritability uses *Passiflora* extracts. The overall amount of sleep time increases with passion flower administration. After two weeks of consuming passionflower, the ability to fall asleep and stay awake returns. Therefore, adults with insomnia disorders are positively affected by the passionflower's effects on sleep characteristics. Sedative and anti-anxiety properties are present in *Passiflora incarnata* L. Even at a level of 3000 mg/kg, the *Passiflora* extract has little impact on sleep delay. No discernible difference was seen in the total times of REM sleep and non-rapid eye movement (non-REM) sleep. *Passiflora* extract had no discernible impact on delta activity during non-REM sleep. The expression levels of brain-derived neurotrophic factor (BDNF) have increased noticeably in *Passiflora incarnata* L. Passionflower's active ingredients significantly worsen the side effects of benzodiazepines by increasing their inhibitory effect on their ability to bind to gamma-aminobutyric acid receptors. Five patients in clinical research who received fruit from *Passiflora incarnata* for restlessness and insomnia showed altered states of consciousness. Both sedation and intoxication have effects. The fruit of *Passiflora tenuifolia* significantly reduces locomotor activity due to its sedative and anxiolytic effects, but it does not cause muscle relaxation. 400 milligrams per kilogram me of body weight has a protective effect lowering the severity of pentylenetetrazol-induced seizures while preventing the death of animals. (Solbakken *et al.* 1997, Kern, L. Die., *et al.* 2002) [57, 41].

### Anti Diabetic

After consuming yellow passion fruit for eight weeks, there were no noticeable differences in the research groups' capillary blood glucose, fasting blood glucose, or glycated hemoglobin levels. As a result, type 2 diabetes' glycemic control was not restored by yellow passion. Alkaloids, unsaturated sterols, triterpenes, saponins, flavonoids, tannins, and proanthocyanins are all components of *Passiflora suberosa* L. Leaves have 12.97% carbohydrate. After 4 hours of consumption of 50 and 100 mg/kg water leaf extract, the greater hypoglycemic impact was discovered. Fasting blood glucose levels decreased by 18% and by 79% with the extract. Increases the amount of glycogen in the skeletal muscles by 57% and in the liver by 61%. It reduced tri-glyceraldehyde levels by 12% and total cholesterol levels by 17%. The plant showed no signs of toxicity. When given a 70% hydroethanolic extract from *Passiflora edulis* leaves, diabetic rats have better glycemic control, lower levels of non-high-density lipoprotein cholesterol, total cholesterol, and creatinine, as well as less oxidative species secretion and platelet aggregation. Therefore, *Passiflora edulis* leaf extract has health advantages for preventing diabetes and diabetic issues. On glycemic control, the passion fruit has a considerable impact. Diabetic rats have better glycemic control, lower levels of non-high-density lipoprotein cholesterol, total cholesterol, and creatinine, as well as less oxidative species secretion and platelet aggregation. Therefore, *Passiflora edulis* leaf extract has health advantages for preventing diabetes and diabetic issues. On glycemic control, the passion fruit has a considerable impact. *Passiflora ligularis* Jus. Water and ethanol extracts (125 mg/kg to 500 mg/kg, respectively) increase hepatic and muscle glycogen content while lowering blood sugar levels. In order to cure or prevent diabetes, *Passiflora ligularis* Jus. Leaf extracts in water and ethanol are used. In the presence of the yellow

passion fruit, glycemia and serum triglyceride levels both decrease. Sims' *Passiflora edulis* has leaves that promote wound healing. In diabetic rats, it stimulates the antioxidant defense system to have a beneficial effect on treating skin lesions, particularly in the initial few days following wounding. As a result, *Passiflora edulis* Sims is used to treat wounds. The antioxidant properties of yellow passion fruit are present. Administration of yellow passion fruit reduces body weight and fat deposition (particularly in the liver) and improves insulin sensitivity and glucose tolerance in metabolic alterations. Consuming *Passiflora edulis* prevents obesity, hepatic steatosis, and insulin and glucose resistance. The antioxidant and hypoglycemic benefits of *Passiflora tripartite* are greater than those of other fruits. (Araujo *et al.* 2017, Serasinghe, H. P 2018) [7, 63].

#### A nauseating effect

After receiving *Passiflora* in a clinical trial, a 34-year-old woman experienced severe nausea, *incarnata* L., when used as directed. Thus, this patient experienced negative effects from *Passiflora incarnata*. Due to the -carboline alkaloids (harmaline, harmene, and tetrahydroharmine), which excite the central nervous system by slowing down the metabolism of amine neurotransmitters, *Passiflora incarnata* causes optical and auditory illusions, locomotor ataxia, nausea, vomiting, misperception, and anxiety [59]. According to a clinical investigation, passionflower is effective in strengthening resilience in individuals with nervous restlessness. (Fisher, A. A *et al.* 2000, Freson G, *et al.* 2008) [1-25, 26].

#### Hypertension

Cardiovascular disease continues to be the leading cause of morbidity and mortality worldwide despite advances in pharmacotherapies and mechanical treatments, and there is a good possibility that this burden will rise. An associated species of *P. nepalensis* called *P. incarnata* has been known to have antihypertensive properties. *P. incarnata* has an antihypertensive effect because it contains flavonoids and a water-soluble component that has been identified as a mercury salt (C10H22O8 NHgCl2) here is a good possibility that this burden will rise. An associated species of *P. nepalensis* called *P. incarnata* has been known to have antihypertensive properties. *P. incarnata* has an antihypertensive effect because it contains flavonoids and a water-soluble component that has been identified as a mercury salt (C10H22O8 NHgCl2). *P. nepalensis* is used to treat hypertension in folk medicine. (Benson VL *et al.*, 2008) [10-64].

#### Effect on menopause

Acute menopausal syndrome was treated with *Passiflora incarnata* via a variety of mechanisms in clinical research conducted between 1994 and 2016. Acute menopausal syndrome is treated effectively with *Passiflora incarnata*. Hot flashes' negative consequences are reduced with *Passiflora incarnata*. The most typical menopause symptoms experienced by women is hot flashes. As a result, *Passiflora incarnata* is an effective remedy for ladies who get hot flashes. The passionflower is used to treat premenstrual symptoms and perimenopausal diseases that are accompanied by anxiety and insomnia. Generalized anxiety disorder, anxiety, sleeplessness, neuralgia, nervousness, opiate withdrawal, convulsions, spasmodic asthma, palpitations, and cardiac abnormalities, as well as hypertension, sexual

dysfunction, and menopause, can all be treated with *Passiflora incarnata* L. The herb *Passiflora* is efficient at women's perimenopausal symptoms. After taking *Passiflora*, women's vasomotor problems decreased as their sexual lives improved. (Lakhan *et al.*, 2010, Caruso *et al.*, 2017) [42, 13].

**Calming effect:** Vitexin is a flavonoid found in *Herb Passiflora* that has antidepressant and anxiolytic properties. In response to the inoculation with AMF, the arbuscular mycorrhizal fungus (AMF) enhances the production of vitexin in the leaf. This outcome has a significant effect on the pharmaceutical sector. It makes it possible to produce yellow *Herb Passiflora* that has a calming effect. The extract of *Passiflora edulis* (50 and 100 mg/kg) has antidepressant properties. Clinical applications of *Passiflora incarnata* are used to treat mood, anxiety, and sleep difficulties, all of which mirror prevalent mental diseases. 3,252 in-house psychiatric patients received benzodiazepine therapy modifications from Passionflower over the course of 3. 5 years. 200 volunteers took 500 mg of *Passiflora incarnata* orally 60 minutes before the procedure as part of a clinical investigation. Heart rate, blood pressure, and oxygen saturation did not show any appreciable variations. Consequently, *Passiflora incarnata* creates an herbal remedy with a calming effect. Five expectant women with depression or anxiety used *Passiflora incarnata* in clinical research. The findings showed that 2 pregnancies had premature membrane ruptures, 1 newborn had persistent pulmonary hypertension, 2 infants had meconium aspiration syndrome, and 1 pregnancy had neonatal mortality. At 6 months of age, the live-born infants had no congenital impairments or anomalies in their growth or development. Although *Passiflora tenuifila* K. does not relax muscles, the reduction in locomotor activity it causes suggests that it has sedative and anxiolytic properties. Pentylentetrazol can cause seizures; however, *Passiflora tenuifila* K. (400 mg/kg) reduces the intensity and doesn't cause animal mortality. *Passiflora tenuifila* K. is hence free of acute toxicity and contains hypnotic-sedative, anticonvulsant, and anxiolytic properties. Brain-derived neurotrophic factor expression rises in *Passiflora incarnata* L. Consequently, metabolomics and proteome profiles exist for *Passiflora incarnata* L. (Sarris J *et al.*, 2011, De Oliveira, P. T. F *et al.*, 2019, Gualala *et al.*, 2019) [24, 18, 29].

#### Precautions

(Aragon, D. C *et al.*, 2020, Yang, Z *et al.*, 2020) [5, 6].

#### Mutagenesis, infertility issues, and carcinogenesis

At a concentration of 1.3 mg/ml of *Herb Passiflora* water extract in *Aspergillus nodulins*, there is no genotoxic effect. The plating technique used for this test makes it possible to identify somatic segregation brought on by chromosome mis segregation, mitotic crossing-over, and clastogenic effects. At any tested dose, there is no increase in the segregant sector or colony rate. Because the seeds of *Passiflora mollissima* have an anti-proliferative impact, they are used to treat HT-29 cancer cells.

#### Non-teratogenic effects and pregnancy

*Herb passiflorae* is employed as a contraindicated agent during pregnancy since it induces uterine contractions in animal models.

#### Moms who are nursing

Nursing mothers should not use *Herb Passiflora* without a

physician's advice.

### Use in pediatrics

Children should not be given *Herb Passiflora* without a doctor's referral. Due to the presence of *Lactobacillus casei* in passion fruit, it is more suitable for use by youngsters than chocolate fermented milk drinks.

### Other safety measures

There is no known information on common shares or securities relating to *Herb Passiflorae's* teratogenic effects during pregnancy, drug-drug interactions, or drug-lab method interactions. Through the reduction of oxidative stress, the blue passionflower has a neuroprotective effect against epilepsy.

### Conclusion

Modern testing and evaluation in various medical conditions have proven the medicinal efficacy of *P. incarnata*, a plant widely employed in the Indian system of medicine. According to these investigations, this natural remedy is a cutting-edge option for drug development and bioprospecting for the treatment of conditions like anxiety, sleeplessness, convulsions, sexual dysfunction, cough, cancer, and postmenopausal syndrome. Numerous opportunities for research into this plant's therapeutic uses and more recent aspects of its function still exist. Therefore, these plants' phytochemicals and minerals will make it possible to utilize them for therapeutic purposes. Flavonoid make up the majority of *Herb Passiflorae's* components. For the treatment of dysmenorrhea, neuralgia, and nervous tachycardia, *Herb Passiflora* is used. *Herb Passiflorae's* fruit is used to make jams, jellies, and sweets. The juice is a preferred beverage flavoring. Some *Passiflora species* have not yet been thoroughly investigated for their medicinal potential. In the future, they can be examined for their medicinal potential.

### References

1. Fisher AA, Purcell P, Le Coureur DG. Toxicity of *Passiflora incarnata* L. *Journal of Toxicology: Clinical Toxicology*. 2000 Jan 1;38(1):63-6.
2. Akhundzada S, Kashani L, Mobaseri M, Hosseini SH, Nikzad S, Khani M. Passion flower in the treatment of opiates withdrawal: A double-blind randomized controlled trial. *J Clin Pharm Ther*. 2001;26:369-73.
3. Akhondzadeh S, Naghavi HR, Vazirian M, Shayeganpour A, Rashidi H, Khani M. Passionflower in the treatment of generalized anxiety: A pilot double-blind randomized controlled trial with oxazepam. *Journal of clinical pharmacy and therapeutics*. 2001 Oct 30;26(5):363-7.
4. Appel K, Rose T, Fiebich B, Kammler T, Hoffmann C, Weiss G. Modulation of the  $\gamma$ -aminobutyric acid (GABA) system by *Passiflora incarnata* L. *Phytotherapy Research*. 2011 Jun;25(6):838-43.
5. Aragon DC, de Santana EHW, Pimentel TC, Mantanani FD, de Carla Bassett M, *et al*. Does the dairy matrix affect the ability of *Lactobacillus casei* Lc-1 to survive during storage and under simulated gastrointestinal conditions? *J. Sci. Food Agric*. 2020;100:32-37.
6. Yang Z, Zhang Y, Zhao J, Afzal O, Kazmi I, Al-Abbasi FA, *et al*. The Nrf2/ARE/HO-1 pathway plays a neuroprotective role in kindling-induced epilepsy in poly(lactic-co-glycolic acid) nanoparticles loaded with chrysin. 2020, n/a, e22634, *J. Beachem. Mol. Toxicon.*, <https://doi.org/10.1002/jet.22634>.
7. Araujo MFM, Versa VS, de Freitas RWJF, de Paula Madly, de Araujo TM, Ochoa LRA, *et al*. The effect of flour from the rind of the yellow passion fruit on glycemic control in people with diabetes mellitus type 2: a randomized clinical trial *Journal of Diabetes & Metabolic Disorders*. 2017;16:18, <https://doi.org/10.1186/s40200-017-0300>.
8. Katzung BG. *Basic and clinical pharmacology*. East Norwalk, Connecticut: Prentice-Hall International Inc, 1992, 306.
9. Beaumont DM. The effects of chrysin: A *Passiflora incarnata* extract, on natural killer cell activity in male Sprague-Dawley rats undergoing abdominal surgery. *AANA J*. 2008;76:113-7.
10. Benson VL, Khachigian LM, Lowe HC. DNazymes and cardiovascular disease. *British journal of pharmacology*. 2008 Jun;154(4):741-8.
11. Borrelli F, Pinto L, Izzo AA, Mascolo N, Capasso F, Mercati V, *et al*. Anti-inflammatory activity of *Passiflora incarnata* L. in rats. *Phytotherapy Research (United Kingdom)*; c1996.
12. Carrasco MC, Vallejo JR, Pardo-de-Santayana M, Peral D, Martín MÁ, Altimiras J. Interactions of *Valeriana officinalis* L. and *Passiflora incarnata* L. in a patient treated with lorazepam. *Phytotherapy Research*. 2009 Dec;23(12):1795-6. <https://doi.org/10.1002/ptr.2847>.
13. Caruso S, Cianci S, Cariola M, Fava V, Rapisarda AMC, Cianci A. Effects of nutraceuticals on quality of life and sexual function of peri-menopausal women *J. Endocrinol. Invest*. 2017;40:27-32. <https://doi.org/10.1007/s40618-016-0500-2>.
14. Beaumont DM, Mark TM, Hills R, Dixon P, Veit B, Garrett N. The effects of chrysin, a *Passiflora incarnata* extract, on natural killer cell activity in male Sprague-Dawley rats undergoing abdominal surgery. *AANA J*. 2008;76(2):113-17.
15. Da Cunha RS, Amorim KS, Gercina AC, de Oliveira ACA, dos Santos Menezes L, Groppo FC, *et al*. Herbal medicines as anxiolytics prior to third molar surgical extraction A randomised controlled clinical trial *Clin. Oral Investing*, 2020, 1-8. <https://doi.org/10.1007/s00784-020-03468-1>.
16. Danilo FS, Vivian SV, Vanessa ECSF, Maria LP, Maria AAOS, Ana CPJC, *et al*. Effectiveness of Passion Fruit Peel Flour (*Passiflora edulis* L.) versus Turmeric Flour (*Curcuma longa* L.) on Glycemic Control: A Systematic Review and Meta-Analysis *Curr. Diabetes Rev*. 2020;16:450-456, <http://dx.doi.org/10.2174/1573399815666191026125941>.
17. De Faveri A, De Faveri R, Broering MF, Bousfield IT, Goss MJ, Muller SP, *et al*. Effects of passion fruit peel flour (*Passiflora edulis* f. *flavicarpa* O. Deg.) in cafeteria diet-induced metabolic disorders *J. Ethnopharmacol*. 2020;250:112482. <https://doi.org/10.1016/j.jep.2019.112482>.
18. De Oliveira PTF, dos Santos EL, da Silva WAV, Ferreira MRA, Soares LAL, da Silva FA, *et al*. Production of biomolecules of interest to the anxiolytic herbal medicine industry in yellowpassionfruit leaves (*Passiflora edulis* f. *flavicarpa*) is promoted by mycorrhizal inoculation. *J. Sci. Food Agric*. 2019;99:371-3720, <https://doi.org/10.1002/jsfa.9598>.
19. Della Loggia R, Tubaro A, Redaelli C. Evaluation of the activity on the mouse CNS of several plant extracts and a combination of them. *Rivista di Neurologia*. 1981 Sep

- 1;51(5):297-310.
20. Dhawan K, Kumar S, Sharma A. Aphrodisiac activity of methanol extract of leaves of *Passiflora incarnata* Linn. in mice. *Phytotherapy Research: An International Journal Devoted to Pharmacological and Toxicological Evaluation of Natural Product Derivatives*. 2003 Apr;17(4):401-3.
  21. Duarte IdAE, Milenkovic D, Borges TKdS, Rosa AJdM, Morand C, Oliveira LdLd, *et al.* Acute Effects of the Consumption of *Passiflora setacea* Juice on Metabolic Risk Factors and Gene Expression Profile in Humans *Nutrients*. 2020 Apr 16;12(4):1104. <https://doi.org/10.3390/nu12041104>.
  22. ES, Ribeiro PRV, Iunes MF, Costa AM. Garlic passion fruit (*Passiflora tenuifila* Killip): Assessment Ebrahimie, M.; Bahmani, M.; Shirzad, H.; Rafieian-Kopaei, M.; Saki, K. A review study on the effect of Iranian herbal medicines on opioid withdrawal syndrome J. Evidence-Based Complementary Altern. Med. 2015;20:302–309, <https://doi.org/10.1177/2156587215577896>.
  23. European Pharmacopoeia C. Council of Europe; European Pharmacopoeia: Supplement; c2001.
  24. Wichtl M, Bisset NG. *Herbal Drugs and Phytopharmaceuticals*, Med. Pharm. Scientific Publ. Stuttgart; c1994,
  25. Fisher AA, Purcell P, Le Couteur DG. Toxicity of *Passiflora incarnata* L. J. *Toxicol: Clin. Toxicol.* 2000;38:63-66, <https://doi.org/10.1081/CLT-100100919>. <https://biointerfaceresearch.com/12899>
  26. Frison G, Favretto D, Zancanaro F, Fazzin G, Ferrara SD. A case of  $\beta$ -carboline alkaloid intoxication following ingestion of *Peganum harmala* seed extract. *Forensic Science International*. 2008 Aug 6;179(2-3):e37-43., <https://doi.org/10.1016/j.forsciint.2008.05.003>.
  27. Ghazanfarpour M, Sadeghi R, Abdolalian S, Roudsari RL. The efficacy of Iranian herbal medicines in alleviating hot flashes: A systematic review. *International Journal of Reproductive BioMedicine*. 2016 Mar;14(3):155.
  28. Gibbert J, Kreimendahl F, Lebert J, Rychlik R, Trompetter I. Improvement of stress resistance and quality of life of adults with nervous restlessness after treatment with a passion-flower dry extract. *Complementary medicine research*. 2017;24(2):83-9. <https://doi.org/10.1159/000464342>.
  29. Gonulalan EM, Nemetlu E, Bayazeid O, Kocak E, Yalçın FN, Demirezer LO. Metabolomics and proteomics profiles of some medicinal plants and correlation with BDNF activity. *Phytomedicine*. 2020 Aug 1;74:152920. <https://doi.org/10.1016/j.phymed.2019>.
  30. Guerin JC, Reveillere HP. Antifungal activity of plant extracts used therapeutically, II. Study of 40 extracts from nine fungal strains 1985. *Ann Pharm Fr*. 1985;43:77-81.
  31. Guerrero FA, Medina GM. Effect of a medicinal plant (*Passiflora incarnata* L) on sleep. *Sleep Science*. 2017 Jul;10(3):96. <https://doi.org/10.5935/1984-0063.20170018>.
  32. Felter HW, Lloyd JU. *King's American Dispensatory 1898*. Reprint by Eclectic Medical Publications, Portland; c1983.
  33. Holanda DK, Wurlitzer NJ, Dionisio AP, Campos AR, Moreira RA, de Sousa PH, *et al.* Garlic passion fruit (*Passiflora tenuifila* Killip): Assessment of eventual acute toxicity, anxiolytic, sedative, and anticonvulsant effects using *in vivo* assays. *Food Research International*. 2020 Feb 1;128:108813. <https://doi.org/10.1248/bpb.28.808>. <https://doi.org/10.2527/2004.8282410x>.
  34. Holanda DKR, Wurlitzer NJ, Dionisio AP, Campos AR, Moreira RA, de Sousa PHM, *et al.* Garlic passion fruit (*Passiflora tenuifila* Killip): assessment of eventual acute toxicity, anxiolytic, sedative, and anticonvulsant effects using *in vivo* assays *Food Res. Int.* 2020;128:108813, <https://doi.org/10.1016/j.foodres.2019.108813>. <https://doi.org/10.1002/ptr.3352>.
  35. Dhawan K, Sharma A. Antitussive activity of the methanol extract of *Passiflora incarnata* leaves. *Fitoterapia*. 2002;73(5):397-99.
  36. Dhawan K, Kumar S, Sharma A. Antiasthmatic activity of the methanol extract of leaves of *Passiflora incarnata*. *Phytother Res*. 2003;17(7):821-22.
  37. Kargozar R, Azizi H, Salari R. A review of effective herbal medicines in controlling menopausal symptoms. *Electronic physician*. 2017 Nov;9(11):5826. <https://doi.org/10.19082/5826>.
  38. Keck ME, Nicolussi S, Spura K, Blohm C, Zahner C, Drewe J. Effect of the fixed combination of valerian, lemon balm, passionflower, and butterbur extracts (Ze 185) on the prescription pattern of benzodiazepines in hospitalised psychiatric patients—a retrospective case-control investigation *Phytother. Res.* 2020;34(6):1436-1445, <https://doi.org/10.1002/ptr.6618>.
  39. Kinghorn GR. Passion, stigma, and STI. *Sex Transm Inf* 2001; 77:370-5 of eventual acute toxicity, anxiolytic, sedative, and anticonvulsant effects using *in vivo* assays. *Food Res. Int.* 2020;128:108813, <https://doi.org/10.1016/j.foodres.2019.108813>.
  40. Koriem KM, Gad IB, Nasiry ZK. Protective effect of extract against indomethacin-induced gastric ulcer in rats. *Interdisciplinary toxicology*. 2015 Mar 1;8(1):25-34. <https://doi.org/10.1515/intox2015-0006>.
  41. Krenn L. *Die Passionsblume (Passiflora incarnata L.) - ein bewährtes pflanzliches Sedativum\** Wien. *Med. Wochenschr.* 2 002 Jan 1;152(15-16):404-6. <https://doi.org/10.1046/j.1563-258X.2002.02062.x>.
  42. Lakhan SE, Vieira KF. Nutritional and herbal supplements for anxiety and anxiety-related disorders: systematic review. *Nutrition journal*. 2010 Dec;9:1-4. <https://doi.org/10.1186/1475-2891-9-42>.
  43. Lee J, Jung HY, Lee SI, Choi JH, Kim SG. Effects of *Passiflora incarnata* Linnaeus on polysomnographic sleep parameters in subjects with insomnia disorder: A double-blind randomized placebo-controlled study. *International clinical psychopharmacology*. 2020 Jan 1;35(1):29-35. <https://doi.org/10.1097/YIC.0000000000000291>.
  44. Leslie GB. A pharmacometric evaluation of nine Bio-Strath herbal remedies. *Medita*. 1978;8(10):3-19.
  45. Marcin O, Tomasz MK. Extracts and Flavonoids of *Passiflora* Species as Promising Anti-Inflammatory and Antioxidant Substances *Curr. Pharm. Des.* 2020;26:1-24, <http://dx.doi.org/10.2174/1381612826666200526150113>.
  46. Medina JH, Paladini AC, Wolfman C, de Stein ML, Calvo D, Diaz LE, *et al.* Chrysin (5,7-di-OH-flavone), a naturally occurring ligand for benzodiazepine receptors, has anticonvulsant properties. *Biochem. Pharmacol.* 1990 Nov 15;40(10):2227-31. [https://doi.org/10.1016/0006-2952\(90\)90716-X](https://doi.org/10.1016/0006-2952(90)90716-X) of Chamomile and *Passiflora* Extracts

- in Sleep-Disturbed Rats, *Biol. Pharm. Bull.* 2005, 28, 808–810,
47. Ozturk Z, Kalayci CC. Pregnancy outcomes in psychiatric patients treated with *Passiflora incarnata* Complement. *Ther. Med.* 2018;36:30-32, <https://doi.org/10.1016/j.ctim.2017.11.008>.
48. Peeters E, Driessen B, Steegmans R, Henot D, Geers R. Effect of supplemental tryptophan, vitamin E, and a herbal product on responses by pigs to vibration. *Journal of animal science.* 2004 Aug 1;82(8):2410-20.
49. Pilcher J, Mauer R. The action of “female remedies” on intact uteri of animals. *Surg Gynecol Obstet.* 1918;27:97-99.
50. Reginatto FH, De-Paris F, Petry RD, Quevedo J, Ortega GG, Gosmann G, *et al.* Evaluation of anxiolytic activity of spray dried powders of two South Brazilian *Passiflora* species. *Phytotherapy Research: An International Journal Devoted to Pharmacological and Toxicological Evaluation of Natural Product Derivatives.* 2006 May;20(5):348-51.
51. Rey D, Fernandes TA, Sulis PM, Gonçalves R, Seplveda R, Silva Frederico MJ, *et al.* Cellular target of isoquercetin from *Passiflora ligularis* Juss for glucose uptake in rat soleus muscle *Chem. -Biol. Interact.* 2020;330:109198, <https://doi.org/10.1016/j.cbi.2020.109198>.
52. Ruggy GH, Smith CS. A pharmacological study of the active principle of *Passiflora incarnata* *J. Am. Pharm. Assoc.* 1940;29(6):245-249, <https://doi.org/10.1002/jps.3030290602>.
53. Salles BCC, da Silva MA, Taniguthi L, Ferreira JN, da Rocha CQ, Vilegas W, *et al.* *Passiflora edulis* leaf extract: evidence of antidiabetic and antiplatelet effects in rats *Biol. Pharm. Bull.* 2020 Jan 1;43(1):169-74. <https://doi.org/10.1248/bpb.b18-00952>.
54. Sarris J, Panossian A, Schweitzer I, Stough C, Scholey A. Herbal medicine for depression, anxiety and insomnia: a review of psychopharmacology and clinical evidence. *European neuropsychopharmacology.* 2011 Dec 1;21(12):841-60. <https://doi.org/10.1016/j.euroneuro.2011.04.002>.
55. Shanmugam S, Thangaraj P, dos Santos Lima B, Trindade GGG, Narain N, Mara de Oliveira e Silva A, *et al.* Protective effects of flavonoid-rich *P. subpeltata* Ortega on indomethacin-induced experimental ulcerative colitis in rat models of inflammatory bowel diseases *J. Ethnopharmacol.* 020 Feb 10;248:112350. <https://doi.org/10.1016/j.jep.2019.112350>.
56. Shinomiya K, Inoue T, Utsu Y, Tokunaga S, Masuoka T, Ohmori A, *et al.* Development of a chitosan hydrogel containing flavonoids extracted from *Passiflora edulis* leaves and the evaluation of its antioxidant and wound healing properties for the treatment of skin lesions in diabetic mice *Journal of Biomedical Materials Research Part A.* 2020;108:654-662, <https://doi.org/10.1002/jbm.a.36845>.
57. Solbakken AM, Rrbakken G, Gundersen T. Nature medicine as an intoxicant. *Tidsskrift for den Norske Laegeforening: Tidsskrift for Praktisk Medicin, Ny Raekke.* 1997;117:1140-1141
58. Soulamani R, Younos C, Jarmouni S, Bousta D, Misslin R, Mortier F. Behavioural effects of *Passiflora incarnata* L. and its indole alkaloid and flavonoid derivatives and maltol in the mouse *J. Ethnopharmacol.* 1997;57:11-20, [https://doi.org/10.1016/S0378-8741\(97\)00042-1](https://doi.org/10.1016/S0378-8741(97)00042-1).
59. Sousa DFd, Arajo MFd, de Mello VD, Damasceno MMC, Freitas RWJFd. Effectiveness of Passion Fruit Albedo versus Turmeric in the Glycemic and Lipaemic Control of People with Type 2 Diabetes: A Randomised Clinical Trial *J. Am. Coll. Nutr.* 2020, 1-10. <https://doi.org/10.1080/07315724.2020.1823909>.
60. Speroni E, Billi R, Mercati V, Boncompagni E, Toja E. Sedative effects of crude extract of *Passiflora incarnata* after oral administration *Phytother. Res;* c1996.
61. Speroni E, Billi R, Perellino NC, Minghetti A. Role of chrysin in the sedative effects of *Passiflora incarnata* L. *Phytotherapy Research (United Kingdom);* c1996
62. Speroni E, Minghetti A. Neuropharmacological activity of extracts from *Passiflora incarnata* *Planta Med.* 1988 Dec;54(06):488-91. <https://doi.org/10.1055/s-2006-962525>.
63. Sudasinghe HP, Peiris DC. Hypoglycemic and hypolipidemic activity of aqueous leaf extract of *Passiflora suberosa* L. *Peer J.* 2018 Feb 20;6:e4389. <https://doi.org/10.7717/peerj.4389>.
64. Benson VL, Khachigian LM, Lowe HC. DNazymes and cardiovascular disease. *British journal of pharmacology.* 2008 Jun;154(4):741-8.
65. Wheatley D. Medicinal plants for insomnia: A review of their pharmacology, efficacy and tolerability. *Journal of psychopharmacology.* 2005 Jul;19(4):414-21.