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Formulation and Evaluation of Herbal Tablet containing Methanolic Extract of *Diplocyclos palmatus*

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Abstract

Diplocyclos palmatus (L.) Jeffry, also known as Shivlingi, is a member of the Cucurbitaceae family and has been widely employed in indigenous medicine due to its claimed biological activity. The current study aimed to create a herbal tablet containing a methanolic extract of the leaves of *Diplocyclos palmatus* (L.) Jeffry. for the treatment of inflammation. The created herbal tablet was tested according to IP. Thus, the current study presented pharmacological evidence to support the traditional assertion that *Diplocyclos palmatus* (l.) Jeffry. is utilised as an anti-inflammatory drug.

Key-words: *Diplocyclos palmatus* (L.) Jeffry., Leaves, Herbal Tablet

Introduction

Diplocyclos palmatus, often known as Shivalingi, is an annual herbaceous climber that can reach a height of 3-4 metres. It belongs to the Cucurbitaceae family. Leaves are alternating, roughly oblong, palmately 3-7 lobed, 3.5-14 x 4-14.5 cm, lobes linear-lanceolate to elliptic, glabrous; edges sometimes irregularly serrated; petiole 1.5-9.0 cm long. The herb is utilised by several tribal people in India to treat a variety of diseases and ailments. Inflammation is a local response by living mammalian tissues to damage. It is a bodily defence reaction designed to eliminate or limit the spread of harmful chemicals. An inflammatory reaction has several components that might contribute to symptoms and tissue harm. Such components include oedema production, leukocyte infiltration, and granuloma formation. According to folklore, the picked herb was frequently used to alleviate inflammation. [1-2] Keeping this in mind, the current study aimed to create a herbal pill comprising a methanolic extract of *Diplocyclos palmatus* leaves.

Material and Methods

Preparation of Extract

The shade dried. *D. palmatus* leaves (250gms) were roughly pulverised and placed into the Soxhlet apparatus, where they were extracted with methanol until completion. Distillation was used to eliminate the solvent after extraction was complete. The extracts were dried using a rotating evaporator. [3]

Characterization of Extract: The color, odor, taste and pH of the extracts were recorded. [4]

Preparation of herbal tablets from extract (Direct compression technique)

Herbal tablets were made individually using the direct compression procedure with varying concentrations of excipients and MEDPL- I to III. The composition of various formulations is shown in Table 1. All of the ingredients were passed through mesh.

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The powder mixes have good flow characteristics. Consequently, the mixes were directly compressible. Each 250 mg tablet was compressed using a 10-station Mini Press-I rotary tablet compression machine equipped with 6-mm flat-shaped punches. [5-7]

Table 1: Composition of herbal tablet of *D. palmatus* containing methanolic extract of leaves

Ingredients	Formulation Code (MEDPL)		
	MEDPL I	MEDPL II	MEDPL III
Extract	100	100	100
Spray Dried Lactose	126	123	120
Talc	0	0	0
Potato Starch	9	12	15
Mg Sterate	15	15	15
Total Weight	250	250	250

All quantities are in mg

Evaluation of dosage form [5-7]

General appearance (Organoleptic Properties)

The tablets were examined for their color and appearance. The color, odor, taste were observed and noted down.

Tablet Hardness

The crushing strength Kg/cm^2 of prepared tablets was determined for 10 tablets of each batch by using Monsanto tablet hardness tester. The average hardness and standard deviation was determined.

Friability

Twenty tablets were weighed and placed in the Electrolab friabilator and apparatus was rotated at 25 rpm for 4 minutes. After revolutions the tablets were dedusted and weighed again. The percentage friability was measured using the formula.

$$\% F = \{1-(W_t/W)\} \times 100$$

Where, % F = friability in percentage, W = Initial weight of tablet, W_t = weight of tablets after revolution.

Weight Variation

The tablets were evaluated as per I.P., 1996 for weight variation (n = 20) using 1mg sensitivity balance.

Disintegration Time

Disintegration time of the tablet was measured in water (37^0C) using USP disintegration test apparatus. A glass of plastic tube 80-100 mm long with an internal diameter of about 28 mm and external diameter 30-31 mm fitted at the lower end with a disc of rust proof wire gauge. Six tablets were placed in the tube, raise and lower the tube in such a manner that the complete up and down movement is repeated 28 to 32 per minute. The tablets are disintegrated when no particles remains above the gauge, which readily pass through mesh (10 mesh screen).

Drug Content

Five randomly selected tablets were weighed and powdered. The powdered tablet equivalent to 100 mg drug in one tablet was taken and transferred in a 100 ml flask containing 100 ml of 0.1 N HCl pH 1.2. The flask was shaken on a flask shaker and was kept for few hours for the sedimentation of un-dissolved materials. The solution is filtered through Whatman filter paper. 10ml of this filtrate was taken and appropriate dilution was made. The samples were analyzed at specific wavelength using UV visible spectrophotometer. The drug content was determined from the standard curve prepared at optimum λ max.

Results and Discussion

MEDPL were selected for formulation of herbal tablets. The organoleptic properties of the extract before formulation were studies and were reported such as color, odor, taste and pH and were presented in table 2. The extract along with various excipients selected were mixed according to the formula in three batches as mentioned in table 1. It was found from the present investigation that all the studied parameters were within the limit for all the formulation batches. The formulated tablets observed for defects and no any tablet defects were observed in all the formulations. All the formulations of tablets MEDPL were evaluated and the results were presented.

Table 2: Organoleptic properties of extract *Diplocyclos palmatus* (L.) Jeffrey

S/No.	Parameters	Extract
		MEDPL
1.	Color	Light Green
2.	Odor	Intense
3.	Taste	Acceptable
4.	pH	7.01

Table 2: Organoleptic properties of Formulations containing MEDPL

Parameter	**MEDPL**		
FC	MEDPL I	MEDPL II	MEDPL III
Color	Light Green	Light Green	Light Green
Odor	Pleasant	Pleasant	Pleasant
Taste	Good	Good	Good

Table 3: Evaluation Parameters of Formulation containing MEDPL

Parameter	**MEDPL**		
FC	MEDPL I	MEDPL II	MEDPL III
Hardness(kg/cm^2)	4.3	4.9	4.8
Friability	0.53	0.69	0.67
Weight variation	±4.9	±4.83	±4.99
DT	26.10	28.20	30.11
DC	94.29	94.48	97.39

Conclusion

From the results obtained it was found that the formulation code MEDPL III was found to be best and Hence, it was concluded from the present work that the herbal tablet containing MEDPL has promising effect in the treatment of inflammatory conditions.

References

1. Dwivedi Sumeet (2009). Status survey of medicinal plants wealth of Malwa region of Madhya Pradesh with special reference to conservation of vulnerable and endangered species, *J. Econ. Taxon. Bot*., **33(2)**: 443-452.
2. Shriwas, S., & Dwivedi, S. (2016). Traditional Phytotherapy used in the treatment of digestive disorders among tribes of Malwa region (Indore) of Madhya Pradesh. *International Journal of Pharmacy & Life Sciences*, *7*:(10-11): Oct.-Nov: 5330-5331
3. Harborne, J.B. (1984).Phytochemical methods, Chapman and Hall, London. Ist Edition.
4. Lachman, Leon, Liberman, H. A. and Kanig, J .L. (1999). *The Theory and Practice of Industrial Pharmacy*, 3rd ed., Varghese publishing House Bombay, 443-453.
5. Mishra, Uma Shankar, Murthy, P.N., Pasa, Gourishyam and Mishra, Debananda (2011). Formulation development and evaluation of herbal tablet containing mmethanolic extract of *Butea frondosa, Int. J. of Inst. Pharm. and Life Sci.,* **1(3)**:1-15.
6. Subrahmanyam. C.V.S. (2001). *Text Book of Physical Pharmaceutics*, 2nd ed. New Delhi, Vallabh Prakashan, 253-261.
7. Aulton, M.E. (2002). *Pharmaceutics: The Science of Dosage Form Design*. 2nd ed. Churchill Livingstone, London, 322-334.