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Formulation and Standardization of Herbal Capsule for Managing Depression

Mr. Kuldeep Vishwakarma*, Dr. Satyaendra Shrivastava

Parijat College of Pharmacy, Indore (M.P.), India

ABSTRACT: The purpose of the study was to develop and evaluate the antidepressant capsule of ashwagandha and Brahmi ,the capsule was prepared by manual capsule filling machine in which herbal drugs ashwagandha and Brahmi ,methyl Pera bean and propyl Pera bean as a preservative used the capsule were evaluated by weight variation test, content uniformity, Disintegration test , dissolution test .That capsule are useful in the management of depression by act on central nervous system, in case of depression central nervous system is depressed, ashwagandha and Brahmi are those drugs which are stimulate the central nervous system and help in the treatment of depression

KEYWORDS: Depression, Ashwagandha, Brahmi, Parabens

I. INTRODUCTION

Depression is a common psychiatric disease and one of the main causes of disability worldwide. In spite of certain developments in this field, chemical and synthetic drugs used for the treatment of depression may disrupt the treatment process due to numerous side effects and high cost. Today, the goal of using a potential method for treating depression involves the use of medicinal and phytochemical plants, which have many therapeutic benefits. Studies have shown that medicinal plants affect the nervous system and exert antidepressant effects in various ways, including synaptic regulation of serotonin, noradrenaline and dopamine and inflammatory mediators. In this study, depression as well as the factors and mechanisms involved in its development are first addressed, and then medicinal plants effective in the treatment of depression along with their mechanisms of actions are reported. Depression (major depressive disorder) is a common and serious mental disorder that negatively affects how you feel, think, act, and perceive the world. Nearly three in ten adults (29%) have been diagnosed with depression at some point in their lives and about 18% are currently experiencing depression, according to a 2023 national survey. Women are more likely than men and younger adults are more likely than older adults to experience depression According to World Health Report, about 450 million people suffer from a mental or behavioural disorder. This amounts to 12.3 % of the global burden of disease, and predicted to rise up to 15 % by 2020. Depression is a burdensome psychiatric disorder that affects a person's mood, physical health and behaviour. Patients with major depression have symptoms that reflect changes in brain, monoamine neurotransmitters, specifically nor epinephrine, serotonin and dopamine. The disorder is also often associated with suicide and there are between 10 and 20 million suicide attempt every year's. Depression is the most prevalent mental disorder and it is recognised to be symptomatically, psychologically and biologically heterogeneous

II. MATERIALS AND METHOD

Materials

Antidepressant herbal was prepared in Parijat college of pharmacy Indore using drugs Ashwagandha and Brahmi which are collected from local market (Gangaram and Mohanlal sons herbal shop Indore) preservatives used in formulation available in college.

Method

Procedure for formulation of herbal Capsule:

1. The first step is to place the encapsulation plate on top of the cap plate.
2. Place the encapsulation plate on top of the body plate.
3. Adjust the powder guard over the body plate in the third step. It will help in avoiding the fall of powder by the sides.
4. Fill the powder appropriately on the body plate with the use of a spreader.

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5. Take the help of a tamping plate if the bottoms are not filled enough.
6. If still the bottoms are not filled, use the tamping plate.
7. The following step is to remove the filled cap plate and place the middle sheet on the top. (NOTE: the hole with the bigger diameter of the middle sheet faces the cap plate.)
8. Now, place both your hands on the top. Apply the equal push downwards and ensure the bodies and caps match together before direct press down.
9. Capsule filling Is done by using. Manual capsule filling machine.

S.No.	Name of Ingredients	Quantity required		
		F1	F2	F3
01.	Ashwagandha	200mg	200mg	200mg
02.	Brahmi	200mg	200mg	200mg
03.	Methyl Paraben	0.25gm	0.25gm	0.25gm
04.	Propyl Paraben	2.5ml	2.5ml	2.5ml
05.	Starch	3gm	2gm	1gm

Table : Formulation of herbal capsule

Evaluation of herbal capsule

a) **Description:** Size, shape, colour etc were evaluated (Lachman et al., 1987).
b) **Uniformity of weight:** Test for uniformity of weight was performed as per Indian pharmacopoeia, 1996.
c) **Determination of pH**: The test was performed same as earlier in the case of pH determination for extract. Here powder of one capsule was used.
d) **Disintegration test for capsule:** Disintegration test was performed using the digital microprocessor based disintegration test apparatus by VEEGO. One capsule was introduced into each tube and added a disc to each tube. The assembly was suspended in the water in a 1000 ml beaker. The volume of water was such that the wire mesh at its highest point is at least 25 mm below the surface of the water, and at its lower point was at least 25 mm above the bottom of the beaker. The apparatus was operated and maintained the temperature at 370 ± 20C. Noted down the time require to all capsules to disintegrate and pass through wire mesh.
e) **Disintegration test for capsule:** Disintegration test was performed using the digital microprocessor based disintegration test apparatus by VEEGO. One capsule was introduced into each tube and added a disc to each tube. The assembly was suspended in the water in a 1000 ml beaker. The volume of water was such that the wire mesh at its highest point is at least 25 mm below the surface of the water, and at its lower point was at least 25 mm above the bottom of the beaker. The apparatus was operated and maintained the temperature at 370 ± 20C. Noted down the time require to all capsules to disintegrate and pass through wire mesh.

III. RESULT AND DISCUSSION

The herbal capsule of depression. With ashwagandha. And Brahmi was prepared. By manual capsule filling. Process. In this method herbal drugs were used with some preservative I.e. methyl Pera bean. Propyl Pera bean finally the three formulations was prepared that is F1,F2,F3. And all the formulation was evaluated by various parameter like physical appearance, weight variation of capsule. Disintegration test and dissolution test's the result of evaluation parameter are done and describe in the given table.

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3.1 Organoleptic properties:

Fig: Organoleptic Properties

Ingredients	Colour	Odour	Taste	Texture
Ashwagandha	Light brown or Yellowish brown	Sweet and faintly horse like	Bitter and acrid	**Fine, smooth, and**
Brahmi	**Pale yellow**	**Pleasant**	**Bitter**	**Coarse**

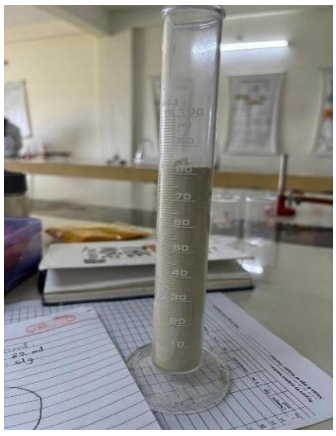
Table no. 3.1 Organoleptic Properties

- **Flow Properties of Ashwagandha and Brahmi powder:**
- **Bulk and Tapped density**

Bulk density measurement carried out by using flat- round measuring cylinder with a volume of 100 ml.

- **Angle of repose:**

It was determined by fixed funnel method onto a bottom graph paper. The funnel was fixed on a height, and moved according to the height of the conical heap in order to keep a constant distance between the top of the heap and the funnel.



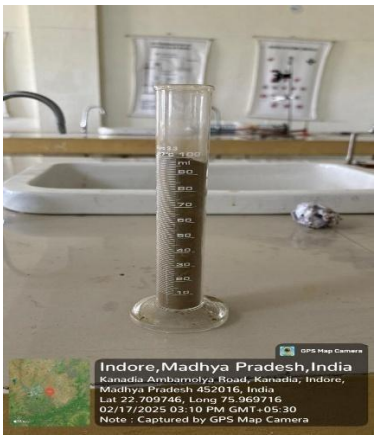


Fig.no. 3.2 Flow properties

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Flow Properties	Result	
	Brahmi	Ashwagandha
Bulk Density	**0.4**	**0.41**
Tapped Density	**0.61**	
Carr's Index	**30**	**25.45**
Hausner's Ratio	**1.25**	**1.34**
Angle of Repose	**32 ° (Good flow)**	**27.80° (Good flow)**

Table: flow property of powder

Weight Variation:
Weight variation is done by weighing balance data is mention in below table

Sr No.	F1(mg)	F2(mg)	F3(mg)
1	460	480	480
2	470	480	470
3	480	480	460
4	470	490	460
5	470	470	480
6	480	480	480
7	490	470	470
8	480	460	480
9	470	480	490
10	490	470	470
11	480	450	460
12	470	460	450
13	460	450	460
14	450	470	470
15	460	480	480
16	480	480	490
17	470	470	470
18	470	470	460
19	490	480	450
20	480	490	480

Table: Table of Weight Variation

Disintegration test for capsule:
Disintegration test was performed using the digital micro-processor based disintegration test apparatus by VEEGO. One capsule was introduced into each tube and added a disc to each tube. The assembly was suspended in the water in a 1000 ml beaker.

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Formulation	Time (min)
F1	30
F2	30
F3	30

Table: Disintigration test

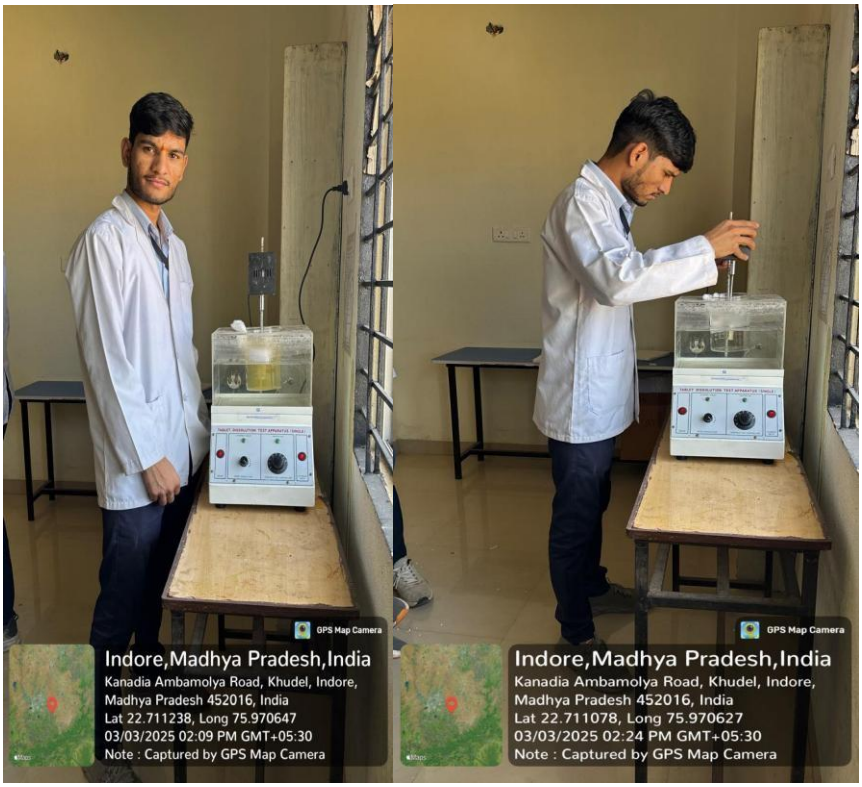

Fig.: Dissolution

Fig.: Formulation

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IV. CONCLUSION

The herbal Capsule including Brahmi and Ashwagandha were aimed to manage the depression and other mental disorders. In the various research it's seen that Ayurveda interventions with Brahmi and Ashwagandha had a beneficial role in the management of MDD. It showed antidepressant, anxiolytic, sleep promoting, improved quality of life, decreased global severity of disease, had global improvement and improvement in efficacy index. Had no adverse effects noted. It showed no changes in the normative values of liver and renal parameters. Efficacy was comparable to Escitalopram. Advantages of Ayurveda interventions over Escitalopram was in lesser side effects and better Quality of life.

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