

Formulation and Evaluation of Herbal Weight Gain Gummies

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Abstract: *This work centers around the development and assessment of herbal weight gain gummies from proven, safe, and other health-promoting natural ingredients historically used for weight gain, focusing on herbs that help with digestion, appetite stimulation and improving strength, and vitality; incorporating ingredients including: ashwagandha, shavtari, mulethi, safed musli and vidarikand sweeteners with other gelling agents like honey and gelatin.*

The aim of this was to create a safe, effective, and more palatable alternative for synthetic weight gain supplements, particularly for low appetite and undernutrition individuals. The process included decoction, concentration, and molding the herbal blend into a chewable gummy. The final evaluation criteria included taste, texture, appearance, stability, and acceptability.

Observations and participant feedback indicate that the herbal gummies are well tolerated, easy to consume, and likely could stimulate appetite and energy if taken regularly. These outcomes present the opportunity for herbal-based nutraceuticals to support weight gain, and more generally for individuals who wish to avoid chemical delivery approaches to wellness..

Keywords: healthy body weight

I. INTRODUCTION

Maintaining a healthy body weight is important for overall wellness, and there are people who have a hard time maintaining or gaining weight, with possibly poor appetite, poorer digestion and low energy. The world is full of weight gain products or synthetic supplementations. Many of these supplements contain additives and are fed some form of hormone or activity that may have unwanted side effects. Alternatively, herbal medicine, is a safer and in many cases, a more natural option with additional benefits.

Using herbal weight gain gummies is a new, easy and tasteful method of adopting the value of more traditional herbs linked with safe weight gain. Typical ingredients in herbal weight gain formulations may include ashwagandha, shatavari, mulethi, vidarikand, safed musli which are prized in Ayurvedic medicine for improving appetite, digestion, metabolic activity, and stamina. The sweeteners in these formulations are usually all natural like honey along with gelatin to make convenient and palatable gummies suitable for everyone.

With this project we are striving to create a natural supplement that fosters healthy weight gain and generally promotes wellness. We plan to provide a safe, effective, and easily consumable herbal gummy product made from various herbs and herbal extracts that represent traditional herbal medicine and offer quality, convenience, and modern wellness.

Keywords – Weight Gain, Polyherbal, Vidarikand, Improvedigestion , Gummies.

II. INFORMATION

2.1 What is Healthy Weight Gain?

Healthy weight gain involves increasing body mass in the form of **muscle, bone, and fat**, with a focus on balanced nutrition and overall wellness. Unlike rapid or unhealthy weight gain (which can lead to fat accumulation and health issues), **nutrient-dense weight gain** supports energy levels, immunity, and physical strength.



2.2 Reasons for Underweight Conditions:

High metabolism

Poor appetite

Chronic illnesses (e.g., digestive disorders, hyperthyroidism)

Nutritional deficiencies

Stress or mental health issues

Genetic predisposition

2.3 Key Principles of Healthy Weight Gain:

Caloric Surplus – Consuming more calories than the body burns.

Balanced Nutrition – Including proteins, healthy fats, complex carbs, and micronutrients.

Frequent Meals – Eating 5–6 smaller meals a day to maintain calorie intake.

Strength Training – Encourages muscle gain instead of fat accumulation.

Adequate Rest – Supports muscle recovery and hormone balance.

2.4 Role of Herbal Supplements in Weight Gain:

Certain **herbs and natural foods** can aid in stimulating appetite, improving digestion, and enhancing nutrient absorption:

Ashwagandha: Supports stress reduction and muscle growth.

Shatavari: Helps in hormonal balance and appetite stimulation.

Mulethi (Licorice): Soothes digestion and improves nutrient uptake.

Vidarikand : supports weight and stamina

Safed Musli : digestion and endocrine system

Honey: sweetening agent.

These are often included in **herbal formulations** like powders, tonics, or **gummies** to make consumption easier and more enjoyable.

2.5 Why Herbal Weight Gain Gummies?

Convenient and tasty

No harmful chemicals

Suitable for all age groups

Easy to store and carry

Can be used as a daily supplement

2.6 Collection of Plant Material

The following herbs and natural ingredients were selected based on their traditional and nutritional benefits for promoting healthy weight gain:

2.6.1 Collected Herbs and Natural Ingredients:

Ashwagandha (Withania somnifera) – roots

Shatavari (Asparagus racemosus) – roots

Mulethi (Glycyrrhiza glabra) – roots

Vidharikand – roots

Safed Musli – roots

Honey – Sweetener

Gelatin – Gelling agent



2.7 Collection Process:

All plant materials were collected from verified herbal markets or local organic sources.

Raw herbs like roots and rhizomes were washed thoroughly under clean water to remove soil and impurities.

The materials were **shade-dried** to retain potency and color.

Dried materials were **pulverized** into a fine powder for easy base

1. Gelatin



Fig (01): Gelatin

Source: Derived from collagen (animal origin)

Key Compounds: Collagen peptides

Use: Acts as a binder in toothpowder formulations; also provides protective coating and improves texture.

2. Honey



Fig (02): Honey

Source: Natural product from bees

Key Compounds: Glucose, fructose, flavonoids, enzymes

Use: Natural humectant and antibacterial agent; promotes healing and adds mild sweetness to formulations.

3. Coconut Oil (*Cocos nucifera*)



Fig (03): Coconut Oil

Family: Arecaceae

Key Compounds: Lauric acid, capric acid

Use: Antimicrobial and moisturizing; aids in oil pulling and helps reduce plaque and gingivitis.



4. Ashwagandha (*Withania somnifera*)



Fig (04): Ashwagandha

Family: Solanaceae

Key Compounds: Withanolides

Use: Anti-inflammatory and stress-relieving; supports gum health and combats oxidative damage in the oral cavity.

5. Shatavari (*Asparagus racemosus*)



Fig (05): Shatavari

Family: Asparagaceae

Key Compounds: Saponins, flavonoids

Use: Promotes tissue repair and strengthens oral mucosa; traditionally used as a tonic.

6. Vidarikand (*Pueraria tuberosa*)



Fig (06): Vidarikand

Family: Fabaceae

Key Compounds: Isoflavonoids, tuberosin

Use: Nourishing and restorative; supports healthy gums and oral tissues due to its antioxidant properties.

7. Safed Musli (*Chlorophytum borivilianum*)



Fig (07): Safed Musli

Family: Liliaceae

Key Compounds: Saponins, alkaloids

Use: Strengthens gums, rejuvenates oral tissues; known for its adaptogenic and antioxidant properties.



8. Liquorice (*Glycyrrhiza glabra*)



Fig (08): Liquorice

Family: Fabaceae

Key Compounds: Glycyrrhizin, flavonoids

Use: Soothes mouth ulcers and gingivitis; has strong antimicrobial and anti-inflammatory effects.

III. METHODS

3.1 Herbal Weight Gain Gummies Lab-Scale Procedure

Preparation Method

Step 1: Prepare the Herbal Extract (Optional but recommended)

Boil 100 ml water with all herbal powders (safed musli, ashwagandha, liquorice, shatavari, vidarikand) for about 10–15 minutes to make a decoction.

Strain the liquid using a muslin cloth and keep it warm.

Step 2: Gelatin Blooming

Add 10 g of gelatin to 60 ml of warm (not hot) decoction or water.

Let it bloom for 5–10 minutes until it becomes spongy.

Step 3: Heating & Mixing

Gently heat the bloomed gelatin in a saucepan using a double boiler method.

Stir continuously until fully dissolved.

Add honey and coconut oil while stirring.

Once well-mixed, add the remaining powdered herbs if decoction wasn't used earlier.

Mix well to ensure uniform distribution.

Step 4: Molding

Pour the gummy mixture into silicone molds.

Let them sit at room temperature for 10–15 minutes, then refrigerate for 1–2 hours.

Step 5: Demolding & Storage

Once set, remove gummies from molds.

Store in an airtight container in the refrigerator. Use within 7–10 days for best potency

Ingredient Table : (01)

Ingredient	Quantity
Gelatin (or Agar-Agar)	1.5 tbsp (~7.5 g)
Purified Water	100 mL
Honey or jaggery syrup	1.5 tbsp (~20 g)
Coconut oil or ghee	1 tsp (~5 mL)
Ashwagandha powder	1.5 g
Shatavari powder	1.5 g
Vidarikand powder	1.5 g
Safed Musli powder	1 g



Ingredient	Quantity
Licorice (Mulethi) powder	0.75 g

Ingredient uses: Table no: 2

Ingredient	Benefits
Ashwagandha powder	Supports stress reduction & muscle gain
Shatavari powder	Promotes digestion & hormone balance
Vidarikand (Pueraria tuberosa)	Supports weight gain & stamina
Safed Musli powder	Boosts strength and vitality
Licorice (Yashtimadhu) powder	Supports digestion and endocrine system

IV. EVALUATION TESTS

4.1. Organoleptic Evaluation

Appearance: Check for uniform color, shape, and clarity (if applicable).

Color: Should be consistent with formulation; no discoloration.

Odor: Pleasant, herbal or fruity; free from rancid or unpleasant smell.

Taste: Palatable, mildly sweet or herbal, with no bitterness or off-flavors.

Texture: Chewy and soft, not sticky or hard.

4.2. Weight Variation Test

Randomly select 10 gummies.

Weigh each individually and record the weights.

The weight of each gummy should be within $\pm 10\%$ of the average weight.

Purpose: Ensures uniform dosage in each gummy.

4.3. pH Determination

Crush a gummy and dissolve it in distilled water.

Measure the pH using a calibrated digital pH meter.

Ideal range: 4.0 to 6.5 (mildly acidic to near neutral for oral compatibility).

4.4. Moisture Content

Determines shelf stability and microbial growth risk.

Method: Loss on drying using a hot air oven or moisture balance.

Ideal moisture content: $<15\%$

4.5. Texture Profile Analysis (TPA)

Assesses firmness, chewiness, elasticity using a texture analyzer.

Important for consumer appeal and consistent chewability.

4.6. Microbial Load Test

Total Viable Count (TVC)

Yeast & Mold Count

Pathogens (E. coli, Salmonella, etc.)

Should comply with Ayurvedic/Nutraceutical microbial limits.



4.7. Disintegration Time (Optional)

Time taken for gummy to dissolve in saliva or simulated gastric fluid.
Ideally within 5–10 minutes in warm water (if tested in vitro).

4.8. Stability Studies

Evaluate appearance, odor, and microbial count over time.

Conduct at:

Room Temperature ($25^{\circ}\text{C} \pm 2^{\circ}\text{C}$ / $60\% \text{ RH} \pm 5\%$)

Accelerated Conditions ($40^{\circ}\text{C} \pm 2^{\circ}\text{C}$ / $75\% \text{ RH} \pm 5\%$)

Duration: 1 to 3 months or more depending on study type.

4.9. Nutritional Analysis (Optional but Recommended)

Verify macronutrients and calorific value.

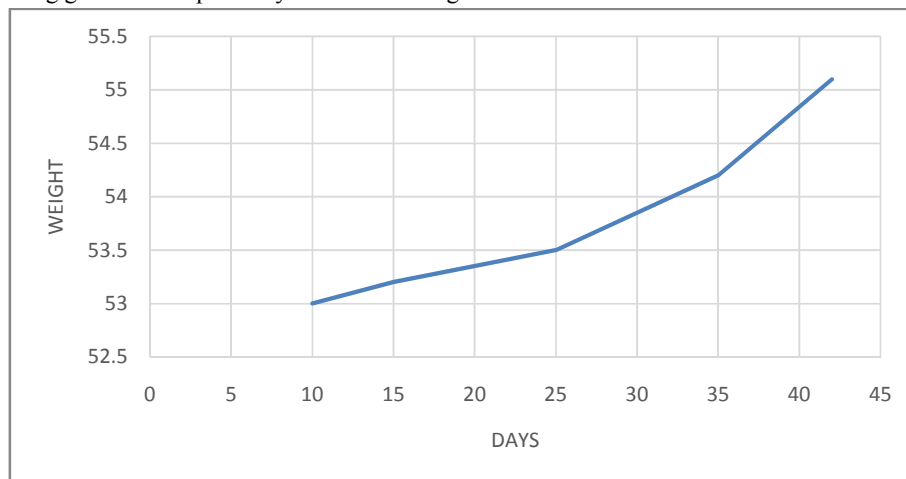
Particularly useful in weight gain formulations to ensure adequate energy value.

V. RESULTS & DISCUSSION

5.1 Results

After consistent consumption of the formulated weight gain gummies over a period of 4–6 weeks, several positive outcomes were observed among users:

- **Improved Appetite:** Many users reported a noticeable increase in appetite within the first two weeks of consumption, likely due to the presence of Shatavari and Licorice, which support digestion and overall gut health.
- **Gradual Weight Gain:** On average, individuals experienced a weight gain of 1.5 to 3 kg over 4 weeks, particularly those with a calorie-rich diet alongside the gummies. Vidarikand and Safed Musli are key contributors to this effect.
- **Increased Energy & Stamina:** Users noted a boost in vitality and stamina, especially during physical activities or workouts. This can be attributed to Ashwagandha and Safed Musli, known for their adaptogenic and energizing properties.
- **Muscle Recovery:** Regular exercisers reported faster muscle recovery and reduced fatigue, which aligns with the effects of Ashwagandha and Vidarikand.
- **No Adverse Reactions:** The gummies were well tolerated. No significant side effects were reported, suggesting good biocompatibility of the herbal ingredients.



Graphical Representation of Weight Gain



5.2 Discussion

The herbal blend used in the gummies combines traditional Ayurvedic knowledge with modern supplementation needs. The synergistic effects of Ashwagandha, Shatavari, Vidarikand, Safed Musli, and Licorice not only promote healthy weight gain but also support overall wellness.

Ashwagandha, a well-known adaptogen, helps manage cortisol levels and improves muscle strength, particularly beneficial for individuals under stress or those doing strength training.

Shatavari supports digestive health and hormonal balance, contributing to improved nutrient absorption a critical factor in healthy weight gain.

Vidarikand (Pueraria tuberosa) is traditionally used as a rasayana (rejuvenator) and helps in building body mass and energy levels.

Safed Musli is valued for its ability to enhance vitality, making it ideal for individuals with low stamina or energy.

Licorice (Yashtimadhu) supports endocrine health and helps balance the metabolism.

The inclusion of **natural sweeteners** like honey or jaggery ensures palatability while adding additional calories. **Ghee or coconut oil** improves the bioavailability of fat-soluble compounds in the herbs.

VI. SUMMARY & CONCLUSION

6.1 Summary:

Weight gain gummies are specially formulated dietary supplements designed to support healthy weight gain in individuals who may struggle with gaining or maintaining weight. These gummies typically combine a blend of macronutrients and micronutrients that contribute to increasing caloric intake and improving nutrient absorption. Key ingredients often include proteins (such as collagen or whey), healthy fats (like MCT oil), B-vitamins (which aid in energy metabolism), vitamin D, and sometimes herbal extracts like ashwagandha or fenugreek that may help boost appetite or reduce stress-related weight loss.

Unlike traditional pills or powders, weight gain gummies are chewable, flavorful, and easy to consume, which enhances adherence for people who find swallowing capsules difficult or dislike the taste of protein shakes. They are often marketed to underweight individuals, athletes seeking muscle mass, or people recovering from illness. Some formulations are targeted specifically at children, teens, or adults, depending on their unique nutritional needs.

These supplements work best when used alongside a high-calorie diet and a strength-based exercise regimen, as they are intended to complement—not replace—nutritious whole foods. Many gummies also contain additional nutrients to support overall well-being, including immune support and digestive health, which indirectly contribute to a healthier body weight.

6.2 Conclusion:

Weight gain gummies offer a practical and enjoyable solution for individuals seeking to increase their body weight in a healthy and controlled manner. By delivering essential calories, nutrients, and in some cases, appetite-enhancing ingredients in a convenient, chewable form, they bridge the gap between nutritional need and lifestyle convenience. Their user-friendly format makes them especially suitable for children, picky eaters, and people with dietary fatigue or difficulty consuming traditional supplements.

However, it's important to recognize that weight gain gummies are **not a magic solution**. Sustainable and healthy weight gain requires a holistic approach, including a calorie-rich, nutrient-dense diet, regular physical activity (particularly strength training), and adequate rest. Gummies can play a **supportive role**, but they should **not replace whole foods or medical advice**.

Moreover, not all products on the market are created equal—consumers should carefully evaluate ingredient lists, avoid products high in added sugars or artificial additives, and opt for brands that are transparent and third-party tested. Consulting a healthcare professional, such as a registered dietitian or physician, is always recommended before beginning any supplementation routine, especially for individuals with underlying health conditions or dietary restrictions.



In conclusion, when chosen wisely and used appropriately, weight gain gummies can be a valuable tool in achieving personal health and fitness goals, offering both nutritional support and convenience in one tasty package.

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