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भारतीय मानक मसौदा
पोल्ट्री आहार घटक के रूप में सूखे रेशमकीट प्यूपा — विशिष्टि
(आई एस 6107 का पहला पुनरीक्षण)

Draft Indian Standard

DRIED SILK WORM PUPAE AS POULTRY FEED INGREDIENT — SPECIFICATION

(First Revision of IS 6107)

ICS No. 65.120

Animal Feeds and Nutrition
Committee, FAD 05

Sectional

Last Date of Comments: **15 March 2025**

FOREWORD

(Formal clauses would be added later)

Silk worm pupae for use in animal feeds are recovered from the cocoons after reeling. In the manufacture of commercial raw silk large quantities of cocoons become available after the reeling operations. The pupae contained in the cocoons may be successfully used as a source of animal protein in poultry and poultry feeds. The cocoons are first boiled to soften the outer chitinous covering, which is then removed manually. The pupae inside, after washing, are pressed to remove excess of moisture and dried either in the sun or in mechanical driers. Such dried pupae, on account of the high fat content, do not keep well for more than a few months. Therefore, to ensure longer storage, the dried pupae are solvent extracted. The extracted pupae withstand longer storage on account of the low level of fat content.

This standard was first published in 1971. In this revision, methods of tests prescribed for determination of various parameters have been updated and packaging and marking requirements have also been updated.

For the purpose of deciding whether a particular requirement of this standard is complied with, the final value, observed or calculated, expressing the result of a test or analysis, shall be rounded off in accordance with IS 2: 2022 'Rules for rounding off numerical values (*second revision*)'. The number of significant places retained in the rounded off value should be the same as that of the specified value in this standard.

*Draft Indian Standard***DRIED SILK WORM PUPAE AS POULTRY FEED INGREDIENT— SPECIFICATION**
(*First Revision*)**1 SCOPE**

1.1 This standard prescribes the requirements and the methods of sampling and test for dried silk worm pupae as poultry feed.

2 REFERENCES

The standards listed below contain provisions which through reference in this text, constitute provision of this standard. At the time of publication, the editions indicated were valid. All standards are subject to revision and parties to agreements based on this standard are encouraged to investigate the possibility of applying the most recent editions of the standards listed below:

<i>IS No.</i>	<i>Title</i>
IS 1070 : 2023	Reagent grade water — Specification (<i>fourth revision</i>)
IS 1374:2024	Chicken feeds — Specification (<i>sixth revision</i>)
IS/ISO 5983 (Part 1) :2005	Animal feeding stuffs — Determination of nitrogen content and calculation of crude protein content: Part 1 (Kjeldahl Method)
IS 5983 (Part 2): 2021/ ISO 5983-2:2009	Animal feeding stuffs — Determination of nitrogen content and calculation of crude protein content: Part 2 Block digestion and steam distillation method (<i>first revision</i>)
IS/ISO 6492 : 1999	Animal feeding stuffs — Determination of fat content
IS/ISO 6865 : 2000	Animal feeding stuffs — Determination of crude fibre content — Method with intermediate filtration
IS 7874 (Part 1): 1975	Methods of tests for animal feeds and feeding stuffs Part 1 General methods
IS 14826: 2021/ISO 5985: 2002	Animal feeding stuffs — Determination of ash insoluble in hydrochloric acid (<i>first revision</i>)
IS/ISO 16634 -1: 2008	Food products — Determination of the total nitrogen content by combustion according to the dumas principle and calculation of the crude protein content — Part 1: Oilseeds and animal feeding stuffs

2 TYPES

2.1 Dried silk worm pupae shall be of two types, namely, Type 1 Sun dried, and Type 2 Solvent extracted dried silk worm pupae.

3 REQUIREMENTS

3.1 General- The dried silk worm pupae shall be from brown to dark brown in colour. The material shall be free from adulterants, musty, stale or other objectionable odour or sourness and extraneous matter. The material shall also be free from visible fungus and insect infestation.

3.2 The material shall also conform to the requirements prescribed in Table 1.

Table 1 Requirements for Dried Silk Worm Pupae as Poultry Feed
(Clause 3.2 and 6.1)

Sl No.	Characteristic	Requirement		Method of Test
		Type 1	Type 2	
(1)	(2)	(3)	(4)	(5)
i)	Moisture, percent by mass, <i>Max</i>	10	7	4 of IS 7874 (Part 1)
ii)	Crude protein ($N_2 \times 6.25$), percent by mass, <i>Min</i>	50	65	IS/ISO 5983 (Part 1)* or IS 5983 (Part 2) or IS/ISO 16634-1
iii)	Crude fat, percent by mass, <i>Max</i>	25	3	IS/ISO 6492
iv)	Crude fibre, percent by weight, <i>Max</i>	3	4	IS/ISO 6865
v)	Total ash, percent by weight, <i>Max</i>	5	6.5	9 of IS 7874 (Part 1)
vi)	Acid insoluble ash, percent by mass, <i>Max</i>	1.0	1.5	10 of IS 7874 (Part 1) or IS 14826*

NOTES-

- 1) The values specified for requirements at Sl. No. (ii) to (vi) are on moisture-free basis.
- 2) In case of dispute, the test method indicated by '*' shall be the referee method.
- 3) For crude fibre, the manual method given in IS/ISO 6865 shall be the referee method.

4 PACKING AND MARKING

4.1 Packing - The material shall be packed in clean and sound moisture-proof, HDPE bags or polyethylene lined jute or laminated paper bags. The mouth of each bag shall be machine stitched.

4.2 Marking

4.2.1 Each container shall be suitably marked or labelled and shall give the following information:

- a) Name and type of the material;
- b) Name and address of the manufacturer;
- c) Batch or code number;
- d) Net mass in kg;
- e) Date of packing;
- f) Best before date in day, month and year format;
- g) Any other requirement as given under *The Legal Metrology (Packaged Commodities) Rules, 2011*.

4.2.2 BIS Certification Marking

The product(s) conforming to the requirements of this standard may be certified as per the conformity assessment schemes under the provisions of the *Bureau of Indian Standards Act, 2016* and the Rules and Regulations framed thereunder, and the products may be marked with the standard mark.

5 SAMPLING

5.1 Representative samples of the material for ascertaining conformity to this standard shall be drawn according to the method prescribed in Annex E of IS 1374.

6 TEST

6.1 Tests shall be carried out as prescribed in col 5 of Table 1.

6.2 **Quality of Reagents** - Unless specified otherwise, pure chemicals shall be employed in tests and distilled water (*see* IS 1070) shall be used where the use of water as reagent is intended.

NOTE - 'Pure chemicals' shall mean chemicals that do not contain impurities which affect the experimental results.