

สถาบันวิจัยวิทยาศาสตร์ประยุกต์แห่งประเทศไทย

APPLIED SCIENTIFIC RESEARCH CORPORATION OF THAILAND

LIST OF PRODUCTS DEVELOPED

IN

BIO-TECHNOLOGY GROUP

TECHNOLOGICAL RESEARCH INSTITUTE

November 1970

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IN
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I. High protein food

1. Protein chip:

A crispy, expanded food product similar in appearance to the traditional food, Khaokriap.

It is prepared from soy bean protein, flours and flavouring materials.

Protein content of dried chip is 22 percent and fried chip is 16 percent.

2. High protein noodles and macaroni products:

Conventional products which are developed by replacing portions of main flour ingredients of the original prototype with mung bean flour, or mung bean protein concentrate or soy bean protein concentrate.

Protein content is 19 - 20 percent.

3. High protein instant noodles:

High protein noodles which are preseasoned, dropped in boiling water for only one minute before serving.

Protein content is 20 percent.

4. Sausage:

A sausage is prepared from soy bean protein, spices, and flavouring materials.

Protein content is 16 percent.

5. Coco-soy milk:

A high caloric value beverage prepared from coconut milk and soy bean.

This is a beverage produced at domestic or community level in the villages and requiring a minimum of technical equipment.

Protein content is 3 percent providing 80 calories per 100 gm.

6. Coco-soy paste:

A protein food product which is designed to be given to children by spoon feeding.

It is prepared from coconut milk, soy bean and fresh banana.

Protein content is 7 percent providing 126 calories per 100 gm.

7. Soy beverage:

A nutritious milk-like beverage prepared by extraction of soy bean in which soy bean flavour is minimized. The extract is further formulated with different kinds of flavours such as chocolate, coconut etc.

Protein content is 3 percent providing 70 calories per 100 gm.

8. Evaporated soy milk:

A concentrated soy beverage which can be added with equal amount of water to make ordinary soy beverage. It can also be added to coffee, tea or other kinds of beverage in place of evaporated milk.

Protein content is 7 percent.

9. Soy custard:

A concentrated soy milk which is formulated so that it can be used as sweet spread or spoon-feeding for children.

Protein content is 8 percent.

10. Bean stalk:

A high protein snack food prepared from mung bean flour with sesame and rice bran flour in various proportions so that the calculated amino acid profile approaches the FAO standard.

Protein content is 18 percent providing 440 calories per 100 gm.

11. Mung bean cream soup:

An instant soup prepared from cooked mung bean flour, spices and flavouring materials.

It is cooked in boiling water with stirring for 1-2 minutes before serving.

Protein content is over 25 percent.

12. Rice bran biscuit:

A biscuit is prepared from dough mixture containing up to 50 percent of the prepared bran flour. The biscuit has high lysine content while the methionine content is only slightly below that of FAO standard.

Protein content is 9 percent.

13. Peanut snacks:

A high protein biscuit which is prepared from partially defatted peanut flour and sugar.

Protein content is 34 percent providing 450 calories per 100 gm.

14. Ferm-Soy mix:

A protein rich food product prepared from fermented soy bean as a major constituent, flavouring agents and a small amount of high grade fishmeal.

It is precooked, ready to eat, with long shelflife under normal conditions and compares favourably in flavour and taste with locally existing food—the fermented fish mix.

Protein content is 40 percent.

15. Textured vegetable protein:

A product used as meat substitute, prepared from soy bean protein as a major constituent and flavouring agents. The product is hydrated in boiling water before cooking.

Protein content is 54 percent.

16. High protein cookies:

A highly acceptable cookie with pleasant flavour and good appearance.

It is prepared from a mixture of white wheat flour and soy protein powder, mixed with egg, fat, sugar and flavouring agents and baked in the oven.

Protein content is 20 - 28 percent providing about 540 calories per 100 gm.

17. **Banana cake:**

A high protein cake with banana flavour.
It is prepared from soy protein, banana, fat, egg, sugar and flavouring agents.
Protein content is 18 percent.
18. **Banana soy weaning food:**

A smooth semi-liquid weaning food with banana flavour.
It is prepared either from cooked soy bean or soy protein, syrup, banana and coconut milk.
Protein content is 8 percent.
19. **Sweet soy weaning food:**

A smooth semi-liquid weaning food with pleasant flavour.
It is prepared from either cooked soy bean or soy protein syrup, coconut milk and flavouring agents.
Protein content is 10 percent.
20. **Porridge:**

A smooth paste with slightly salty taste for weaning baby.
It is prepared from either cooked soy bean or soy protein, sauce and flavouring agents.
Protein content is 10 - 15 percent.
21. **Spread:**

A protein paste with pleasant flavour similar in appearance and taste to the liver paste.
It is prepared from soy protein, fat, spices and flavouring agents.
Protein content is 10 percent providing 158 calories per 100 gm.

II. Basic ingredients

1. **Mung bean flour:**

Dehulled flour, prepared by dry milling and sifting through a fine screen.
The flour has a high nutritional quality and is fit for human consumption.
Protein content is 24 percent.

2. Soy bean flour:

Full fat flour, prepared by dry milling dehulled bean and sifting through a fine screen.

Protein content is 43 percent.

3. Defatted sesame flour:

It is prepared from solvent-extraction of dehulled either black or polished white sesame seeds.

Protein content is 59 percent.

4. Defatted rice bran flour:

It is prepared by milling and sifting of freshly produced solvent-extraction rice bran from rice bran oil factory.

Protein content is 15 percent.

5. Partially defatted peanut flour:

It is prepared by milling of hydraulic pressed dehulled toasted peanut.

Protein content is 50 percent

Fat content is 26 percent.

III. Miscellaneous products

1. Sauce:

It is prepared by the acid hydrolysis of either soy bean or mung bean residues, coconut residues, coconut testa and wheat flour in varying proportions.

2. Dry fruits:

A partial dehydration of local fruits is prepared by osmosis in sugar or syrup

3. Preserve fruits and vegetables:

Various kinds of local fruits and vegetables are preserved in vinegar, syrup, salt and chemicals.

4. Fruit juice:

It is prepared as by products from the waste material in pickling fruits and in preparing fruit candies.

5. Marmalade:

Various kinds of marmalade and jam are prepared from cheap raw materials.

6. Marincider:

A soft drink similar in both appearance and flavour to the apple cider.

It is prepared from a mixture of ripe tamarind fruit pulp extract, syrup and flavouring agents.

7. Instant coconut milk:

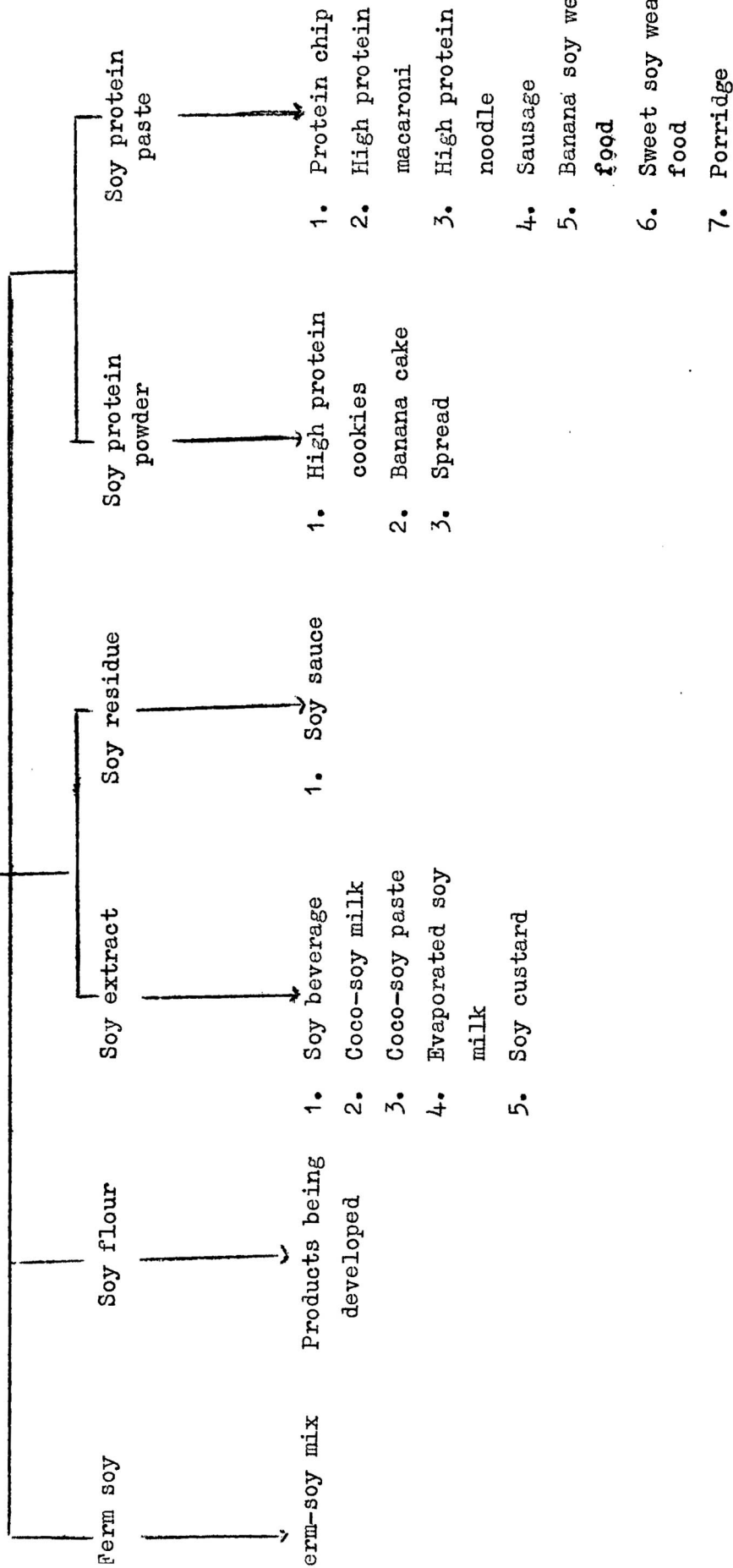
A highly acceptable stabilized coconut milk serving as a good substitute for fresh coconut milk, can be kept at room temperature (30 - 32°C) for several weeks without spoiling.

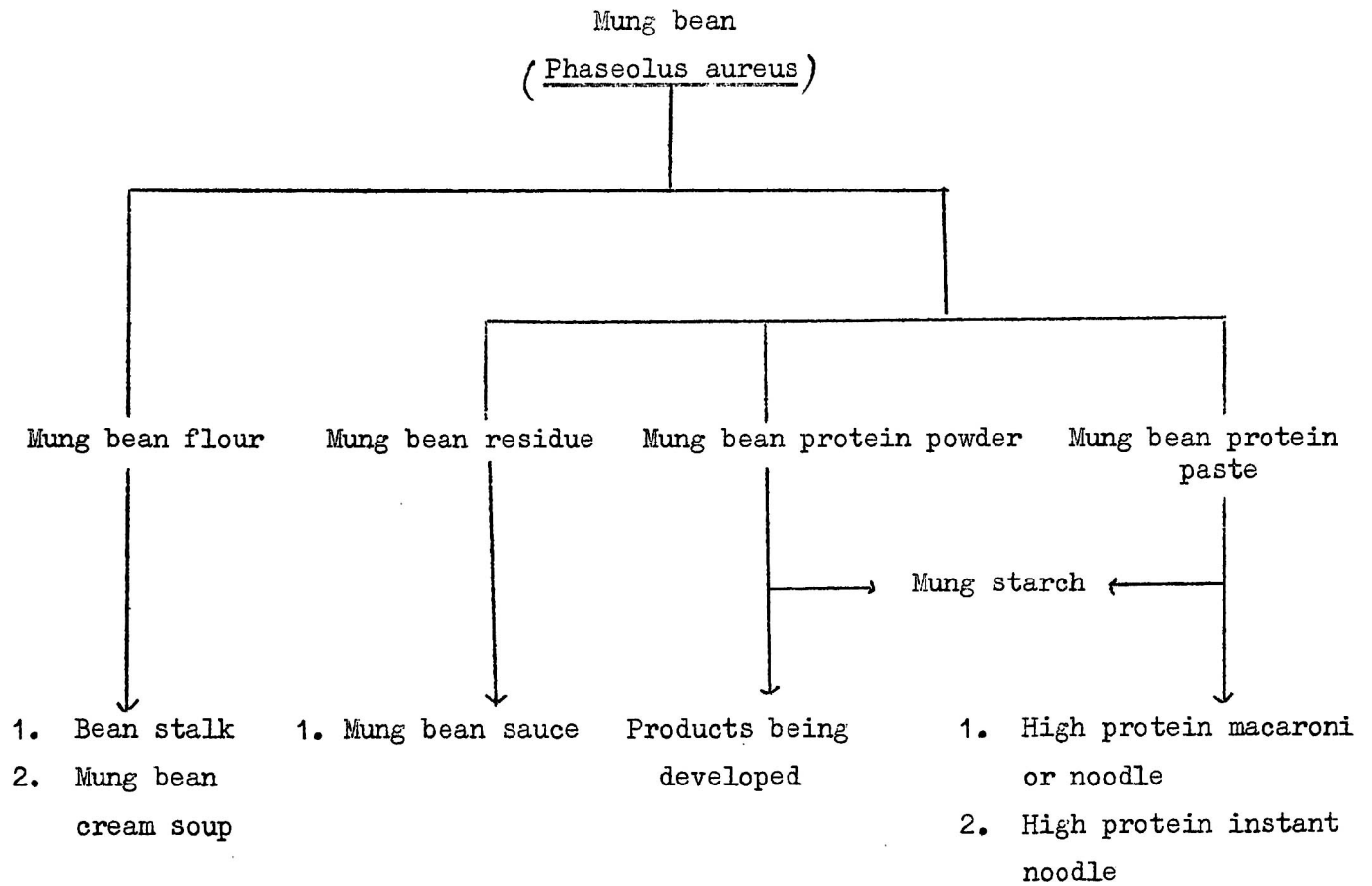
It is prepared by pasteurization of coconut milk which is produced by pressing ground coconut milk with addition of water.

SOY BEAN PRODUCTS

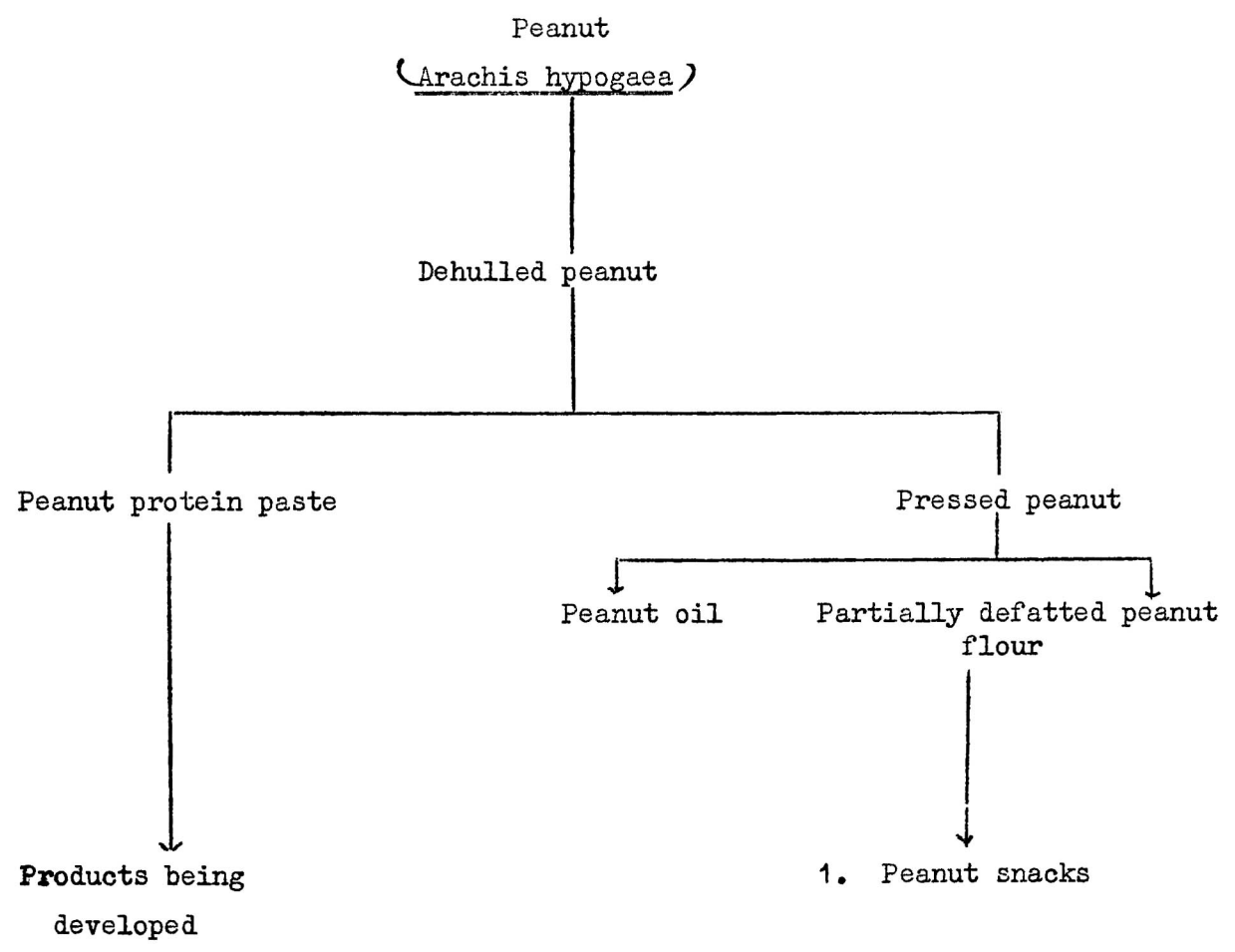
Soy bean

(Glycine max)

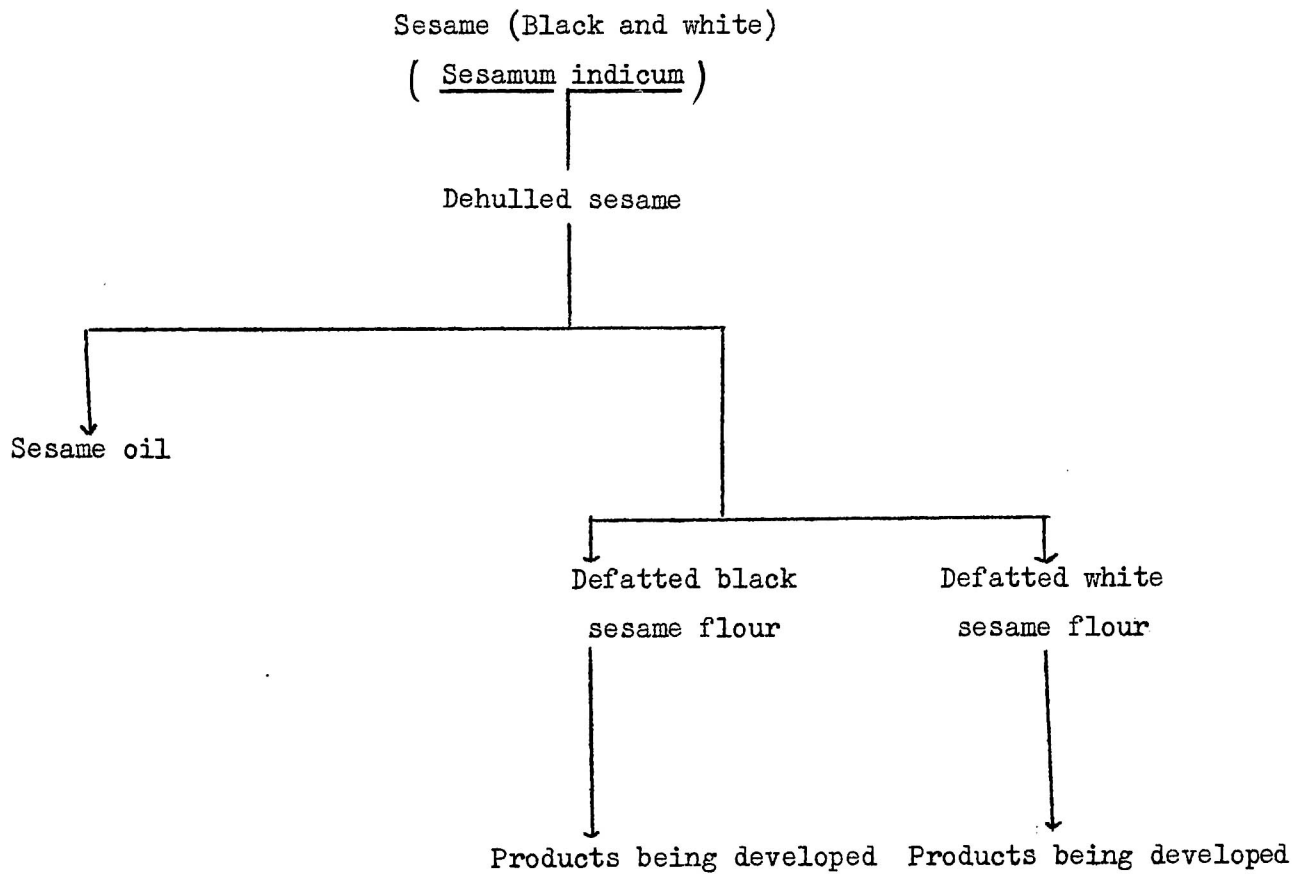


MUNG BEAN PRODUCTS

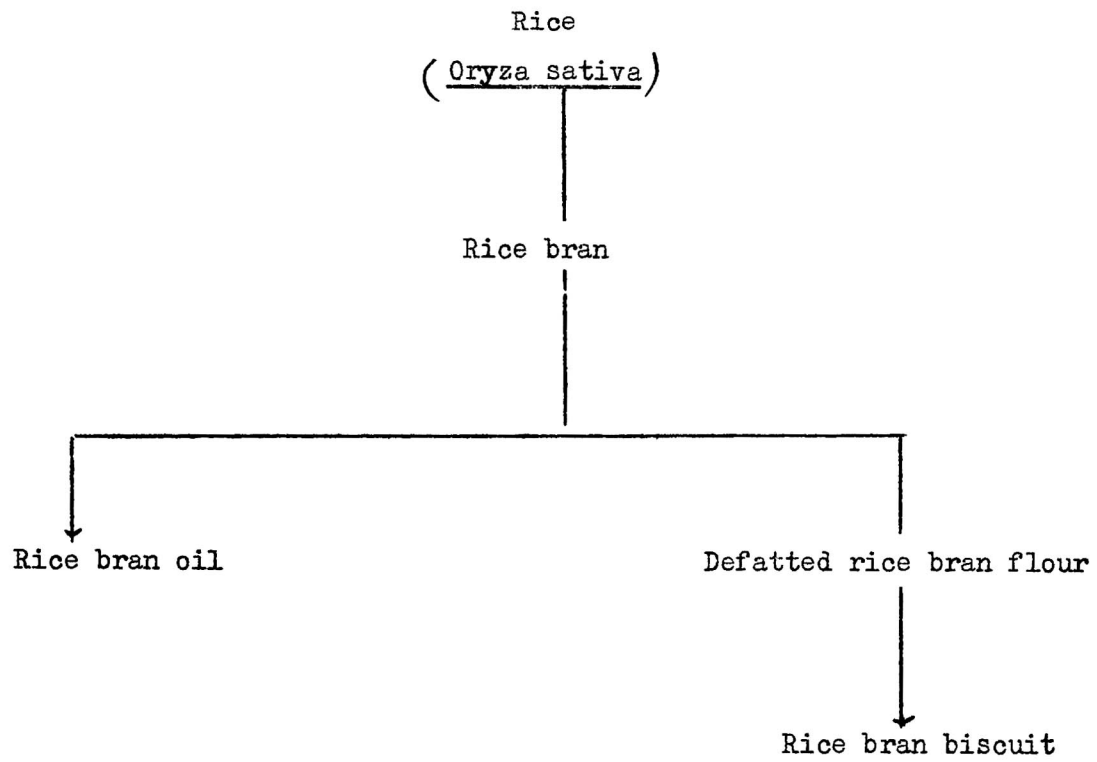
PEANUT PRODUCTS



SESAME PRODUCTS



RICE BRAN PRODUCTS



LIST OF TECHNICAL REPORTS AVAILABLE

AT

APPLIED SCIENTIFIC RESEARCH CORPORATION OF THAILAND

I. Protein food

1. "Thua-Nao: A fermented soybean food of Northern Thailand, I. Traditional processing method" by Malee Sundhagul, Puangpen Smanmathurapoj and Wanchern Bhodacharoen.
Report No. 1 on Research Project 38/3.
2. "Preparation of sausages from vegetable protein" by Pivan Varangoon and Rujira Srisuthep.
Report No. 1 on Research Project 38/9.
3. "Development of a High-Protein Snack food (Bean Stalk)" by Lolita A. Meksongsee, Amornrat Swatditat.
Report No. 2 on Research Project 38/9.
4. "Preparation of crispy expanded protein food resembling Khaokriap" by Pivan Varangoon and Rujira Srisuthep.
Report No. 3 on Research Project 38/9.
5. "Development of High-Protein noodle products" by Amornrat Swatditat, Lolita A. Meksongsee.
Report No. 4 on Research Project 38/9.
6. "Mung bean flour preparation" by C. Lewis Wrenshall, Lolita A. Meksongsee, Amornrat Swatditat and Bancha Udomsakdi.
Report No. 2 on Research Project 38/2
7. "Preliminary work on the preparation and utilization of defatted rice bran flour" by Lolita A. Meksongsee, Rachanekorn Wanotayarote.
Report No. 1 on Research Project 38/14.

II. Miscellaneous

1. "Boiled fish I. Studies of the traditional method of preservation" by Malee Sundhagul.
Report No. 1 on Research Project 23/1.

2. "Bacteriological studies of the boiled fish industry" by Malee Sundhagul, Pijetr Somsrivichai and Puangpen Smanmathurapoj.
Report No. 2 on Research Project 23/1.
3. "An evaluation of the boiled fish industry of Thailand" by Malee Sundhagul, Bang-orn Kasemsarn.
Report No. 4 on Research Project 23/1.
4. "Acceleration of nampla fermentation by a biological quick process" by Sman Vardhanabhuti, Jiraporn Chauvalit, Yuk-Hang Sombatpanit and Pravet Lauhasiri.
Report No. 1 on Research Project 31/4.
5. "Effect of salt concentration and size of fish on course of fermentation and product quality of nampla" by Sman Vardhanabhuti, Jiraporn Chauvalit, Yuk-Hang Sombatpanit and Pravet Lauhasiri.
Report No. 2 on Research Project 31/4.
6. "Preparation of a stabilized coconut milk" by Ubolsri Cheosakul.
Report No. 1 on Research Project 29/1.
7. "Further experiments on the preparation of a stabilized coconut milk" by Ubolsri Cheosakul, Duangduen Inthorn.
Report No. 2 on Research Project 29/2.
8. "Consumer acceptance of stabilized coconut milk" by Ubolsri Cheosakul, Duangduen Inthorn and Churn Downdak.
Report No. 4 on Research Project 29/1.
9. "Separation of tamarind seed testae" by M.L. Sathit Kashemsanta, Lars Johansson.
Report No. 1 on Research Project 15/2.
10. "Separation of bitartrate from tamarind fruit pulp" by Ubolsri Cheosakul.
Report No. 1 on Research Project 15/3.
11. "Separation of potassium bitartrate from green tamarind" by Pivan Varangoon.
Report No. 2 on Research Project 15/3.

12. "Preparation of sauce from ripe tamarind pulp" by Pivan Varangoon,
Rujira Srisuthep.
Report No. 3 on Research Project 15/3.
13. "Preparation of flavour extracts" by Pivan Varangoon.
Report No. 1 on Research Project 11/9.
14. "Artificial beef-flavoured preparations" by Pivan Varangoon.
Report No. 2 on Research Project 11/9.

