

Market Research of Microalgae DHA in China

The Third Edition

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Kcomber Inc.

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1. Introduction

Market Research of Microalgae DHA in China, finished in February 2021, is CCM's third edition report on China's microalgae DHA industry. This report covers the following aspects:

- ✓ Microalgae DHA technology in China
- ✓ Microalgae DHA production, price, import, export and consumption in China
- ✓ Microalgae DHA market forecasts in China
- ✓ Microalgae DHA's key producers in China

2. Approach for this report

- Desk research

This includes access to published magazines, journals, government, industry and customs statistics, association seminars as well as information from the Internet. A lot of work has gone into the compilation and analysis of the obtained information. When necessary, information has been checked with pea protein industry participants and specialists regarding to pea protein production, industrial data, production method, market price, industrial development trend, downstream industry applications and policies. Data collected and compiled are variously sourced from:

- CCM's database
- Published articles from periodicals, magazines, journals, and third-party database
- Statistics from governments and international institutes
- Customs statistics
- Comments from industrial experts on various platforms
- Information from the Internet

- Telephone interview targets

- Key producers
- Key end users
- Key traders
- Industrial associations
- Industrial experts

- Data compilation and crosscheck

Data obtained from various sources have been combined and cross-checked to ensure that this report is as accurate and methodologically sound as possible.

3. Executive summary

China's microalgae DHA industry can be dated back to as early as 2002. After nearly 20 years of development, there have been more than ten microalgae DHA producers in China at present, including Guangdong Runke Bioengineering Co., Ltd. (Guangdong Runke), Hubei Fuxing Biotechnology Co., Ltd. (Hubei Fuxing) and etc.

As of 2020, the capacity of microalgae DHA has increased to XXX t/a in China, from XXX t/a in 2018, with a CAGR of about XXX%. And the output of microalgae DHA has increased from about XXX tonnes in 2018 to about XXX tonnes in 2019. At present, Chinese producers basically produce microalgae DHA through fermentation method with the XXX.

With technology improvement in recent years, the yield and quality of microalgae DHA have improved in China. In 2019, the import volume of microalgae DHA oil and powder was only about XXX tonnes, while the export volume was about XXX tonnes, including XXX tonnes of microalgae DHA oil and XXX tonnes of microalgae DHA powder.

Due to increasing supply of microalgae DHA, the average market price of microalgae DHA oil in China decreased from over USDXXX/t in 2018 to USDXXX/t in H1 2020, while that of microalgae DHA powder decreased from more than USDXXX/t to USDXXX/t in this period.

In China, the total consumption of microalgae DHA has increased from XXX tonnes in 2015 to XXX tonnes in 2019, with a CAGR of XXX%. As to the downstream application, formula food has taken up the lion's share of the total consumption of microalgae DHA in China at present, accounting for over XXX%.

4. What is in the report?

Note: Key data/information in this sample page is hidden, while in the report it is not.

...

2 Supply of microalgae DHA in China, 2018–2019

2.1 Production situation

2.1.1 Production technology

- Current technology

...

Table 2.1.1-1 Strains used by major producers to produce microalgae DHA oil in China, 2019

No.	Producer	Abbreviation	Strain
1	Guangdong Runke Bioengineering Co., Ltd.	Guangdong Runke	XXX
2	XXX	XXX	XXX
3	XXX	XXX	XXX
...	XXX	XXX	XXX

Source: CCM

...

Figure 2.1.1-1 Production technology of microalgae DHA in China



Note: 1.

Dashed boxes indicate raw materials, the diamond indicates the intermediate, and thick lined boxes indicate products and by-products.

2. Products with asterisks—microalgae powder and winterized microalgae DHA oil are not analyzed in the "3 Market price analysis of microalgae DHA in China" due to low production.

Source: CCM

...

Table 2.1.1-2 Comparison of different extraction methods during the production of microalgae DHA oil in China

Method	Process	Feature	Advantage	Disadvantage
XXX	XXX	XXX	XXX	XXX
XXX	XXX	XXX	XXX	XXX
XXX	XXX	XXX	XXX	XX X

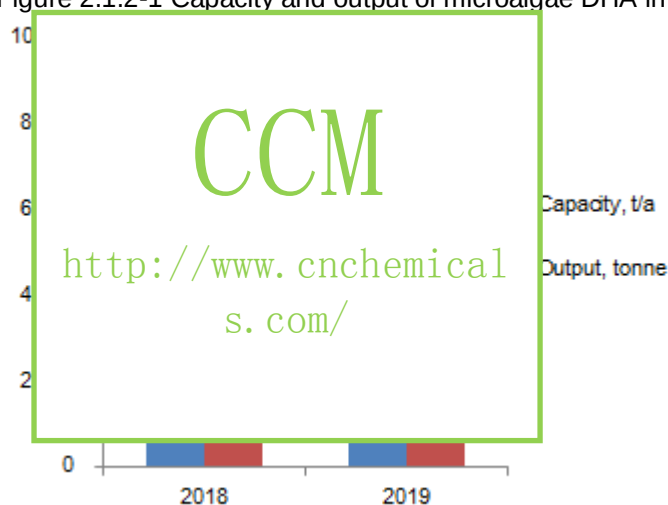
Source: CCM

...

2.1.2 Summary of production, 2018–2019

...

Figure 2.1.2-1 Capacity and output of microalgae DHA in China, 2018–2019



Source: CCM

Table 2.1.2-1 Capacity of microalgae DHA producers in China, 2018–2020

No.	Producer	Abbreviation	Production site	Capacity, t/a					
				2018		2019		2020	
				Oil	Powder	Oil	Powder	Oil	Powder
1	Hubei Fuxing Biotechnology Co., Ltd.	XXX	XXX	XXX	XXX	XXX	XXX	XXX	XXX
2	XXX	XXX	XXX	XXX		XXX		XXX	
3	XXX	XXX	XXX	XXX	XX	XXX	XXX	XXX	XXX
...	XXX	XXX	XXX	XXX	XXX	XXX	XXX	XXX	XXX
Total				XXX		XXX		XXX	

Note: 1. Guangdong Runke Bioengineering Co., Ltd. relocated its capacity of microalgae DHA from Guangdong Province to Fujian Province in 2015.

2. The production capacity of Hubei Fuxing Biotechnology Co., Ltd. given above is in fact for DHA and ARA altogether. It has production capacity of XX t/a ARA/DHA powder and XXt/a ARA/DHA oil.

Source: CCM

Table 2.1.2-2 Output of microalgae DHA producers in China, 2018–2019

No.	Company	Output, tonne					
		2018			2019		
		Total	Oil	Powder	Total	Oil	Powder
1	Hubei Fuxing	XXX	XXX	XXX	XXX	XXX	XXX
2	XXX	XXX	XXX	XXX	XXX	XXX	XXX
3	XXX	XXX	XXX	XXX	XXX	XXX	XXX
...	XXX	XXX	XXX	XXX	XXX	XXX	XXX
Total		XXX	XXX	XXX	XXX	XXX	XXX

Note: Guangdong Runke Bioengineering Co., Ltd. relocated its capacity of microalgae DHA from Guangdong Province to Fujian Province in 2015.

Source: CCM

...

2.1.3 Forecast on production, 2020–2023

- Capacity

...

Table 2.1.3-1 Expansion projects for microalgae DHA by producers in China, as of 2020

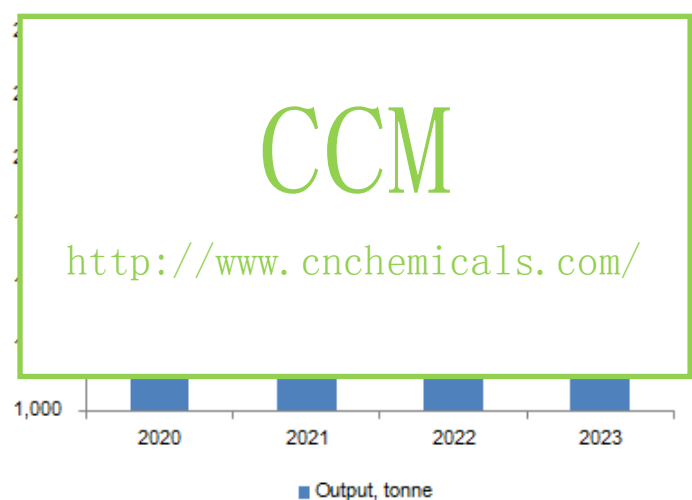
No.	Producer	Abbreviation	Location	Designed capacity, t/a		Launch time	Production time (estimated)
1	XXX	XXX	XXX	XXX	XXX	XXX	XXX
			XXX	XXX	XXX	XXX	XXX
2	XXX	XXX	XXX	XXX	XXX	XXX	XXX
...	XXX	XXX	XXX	XXX	XXX	XXX	XXX

Source: CCM

- Output

...

Figure 2.1.3-1 Forecast on output of microalgae DHA in China, 2020–2023



Source: CCM

2.2 Import situation, 2019

...

Table 2.2-2 China's imports of microalgae DHA by importer, 2019

Importer	DHA oil		DHA powder	
	Volume, kg	Value, USD	Volume, kg	Value, USD
XXX	XXX	XXX	XXX	XXX
XXX	XXX	XXX	XXX	XXX
...	XXX	XXX	XXX	XXX
Total	XXX	XXX	XXX	XXX

Source: CCM

Table 2.2-3 China's imports of microalgae DHA by month, 2019

Month	DHA oil		DHA powder	
	Volume, kg	Value, USD	Volume, kg	Value, USD
January	XXX	XXX	XXX	XXX
February	XXX	XXX	XXX	XXX
March	XXX	XXX	XXX	XXX
...	XXX	XXX	XXX	XXX
Total	XXX	XXX	XXX	XXX

Source: China Customers & CCM

Table 2.2-4 China's imports of microalgae DHA by origin, 2019

Import origin	DHA oil		DHA powder	
	Volume, kg	Value, USD	Volume, kg	Value, USD
XXX	XXX	XXX	XXX	XXX
XXX	XXX	XXX	XXX	XXX
...	XXX	XXX	XXX	XXX
Total	XXX	XXX	XXX	XXX

Source: China Customers & CCM

2.3 Export situation, 2019

...

Table 2.3-1 China's exports of microalgae DHA, 2018–2019

Year	DHA oil		DHA powder	
	Volume, kg	Value, USD	Volume, kg	Value, USD
2018	XXX	XXX	XXX	XXX
2019	XXX	XXX	XXX	XXX

Source: China Customs & CCM

...

3 Market price analysis of microalgae DHA in China

3.1 Current price

...

Table 3.1-1 Quotations of microalgae DHA from some major producers in China, Jan. 2021

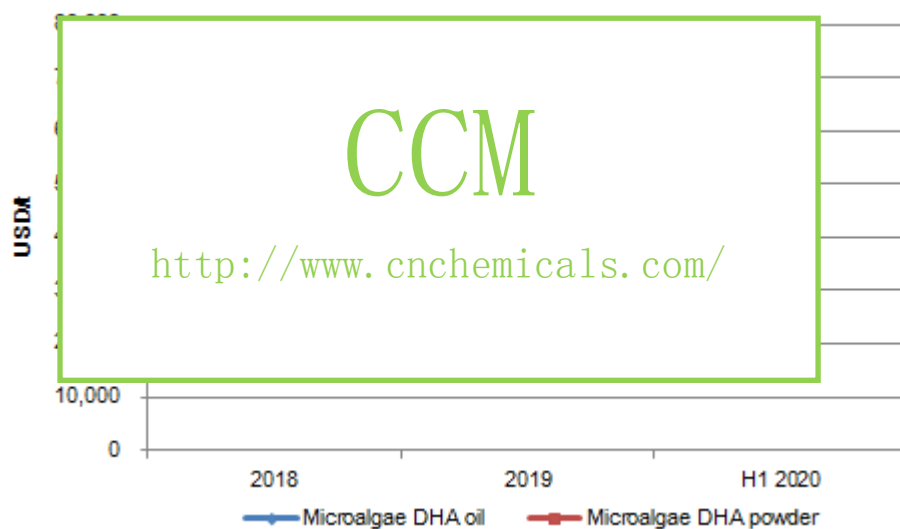
No.	Producer	Abbreviation	Price, USD/t			
			Microalgae DHA oil		Microalgae DHA powder	
			35%	40%	7%	10%
1	XXX	XXX	XXX	XXX	XXX	XXX
2	XXX	XXX	XXX	XXX	XXX	XXX
...	XXX	XXX	XXX	XXX	XXX	XXX

Source: CCM

3.2 Historical price in 2018–2020

...

Figure 3.2-1 Average price (ex-works level) of microalgae DHA in China, 2018–H1 2020



Note: The price of microalgae DHA oil takes the average value between 35% and 40% microalgae DHA oil, and that of microalgae DHA powder takes the average value between 7% and 10% microalgae DHA powder.

Source: CCM

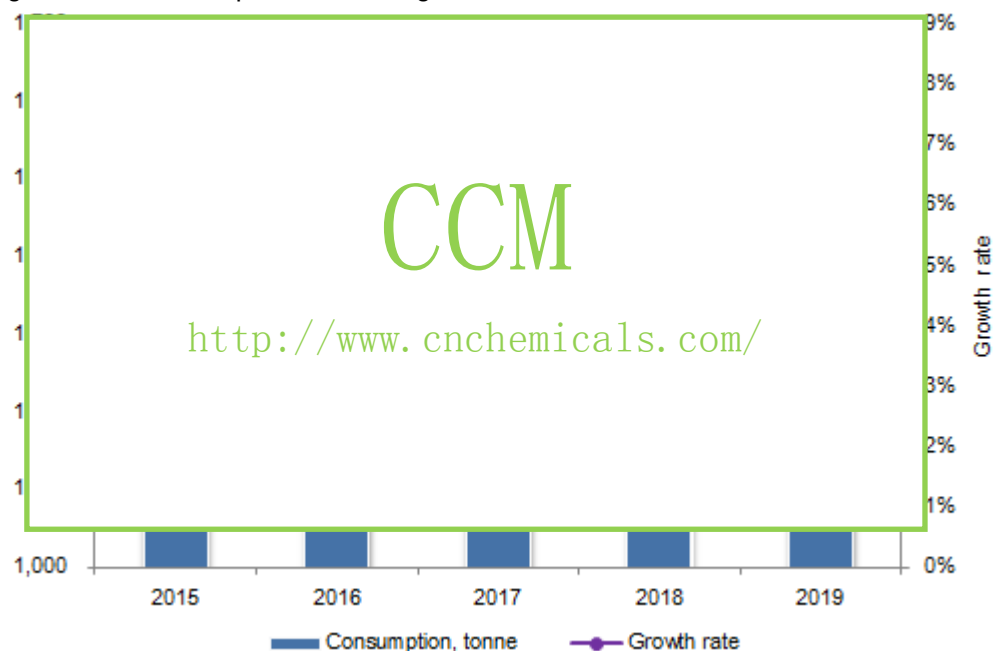
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4 Market demand of microalgae DHA in China

4.1 Demand situation, 2019

...

Figure 4.1-1 Consumption of microalgae DHA in China, 2015–2019



Source: CCM

Figure 4.1-2 Consumption pattern of microalgae DHA in China, 2019



Source: CCM

Table 4.1-1 Consumption of microalgae DHA in China by downstream industry, 2019

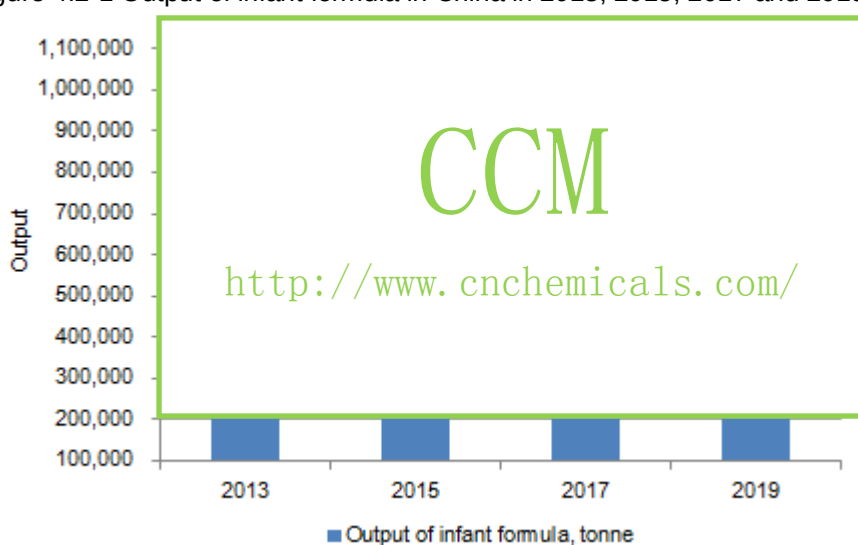
Downstream industry		Consumption volume, tonne	Share, %
XXX	XXX	XXX	XXX
	XXX	XXX	XXX
XXX		XXX	XXX
XXX		XXX	XXX
Total		XXX	XXX

Source: CCM

4.2 Demand in formula food

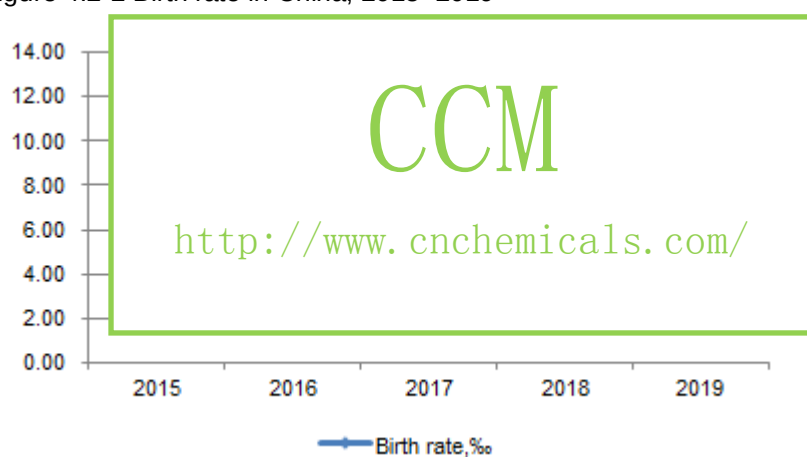
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Figure 4.2-1 Output of infant formula in China in 2013, 2015, 2017 and 2019



Source: CCM

Figure 4.2-2 Birth rate in China, 2015–2019



Source: The National Bureau of Statistics of China

...

Table 4.2-1 Consumption of microalgae DHA in formula food by some end users in China, 2019

No.	End user	Consumption volume, tonne (estimated)	Major application	Major DHA suppliers (estimated)
1	XXX	XXX	XXX	XXX
2	XXX	XXX	XXX	XXX
...	XXX	XXX	XXX	XXX

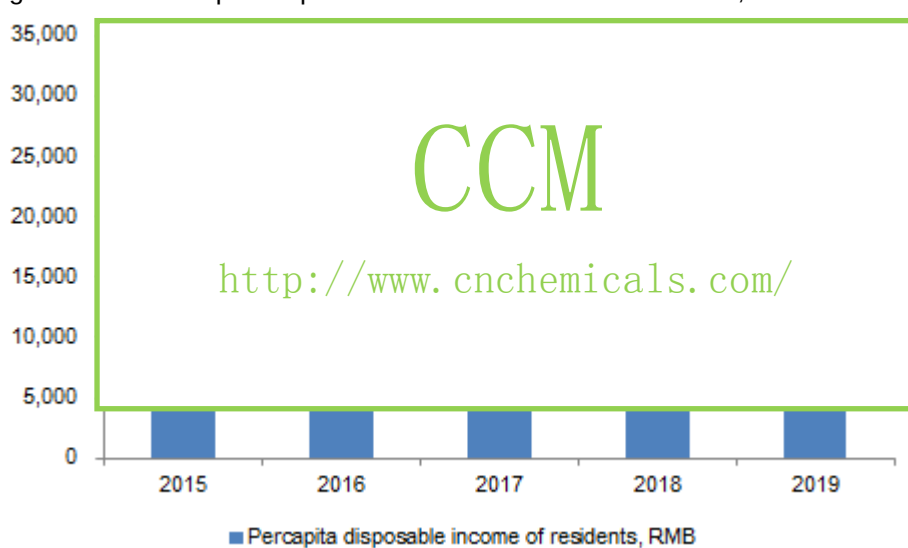
Source: CCM

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4.3 Demand in healthcare products

...

Figure 4.3-1 Per capita disposable income of residents in China, 2015–2019



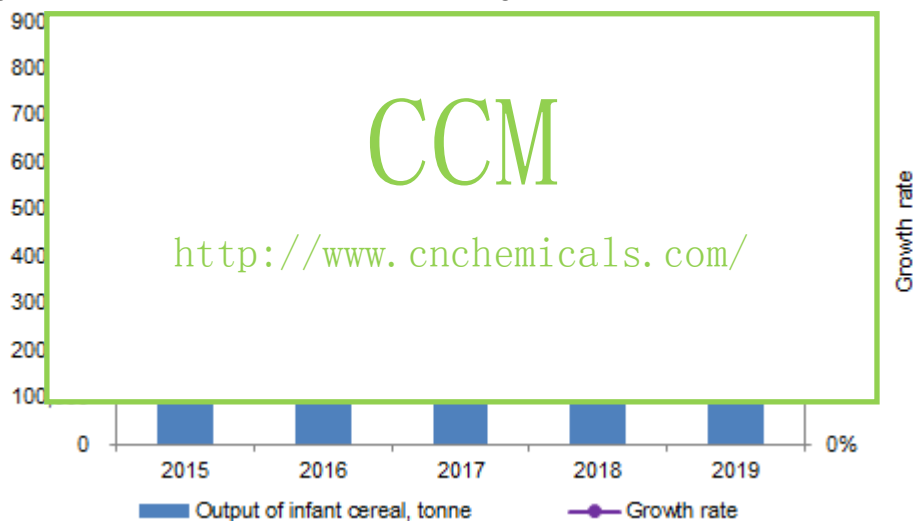
Source: The National Bureau of Statistics of China

...

4.5 Forecast on consumption, 2020–2023

...

Figure 4.5-1 Forecast on demand for microalgae DHA in China, 2020–2023, tonne



Source: CCM

...

6 Analysis of key producers in China

6.1 Guangdong Runke Bioengineering Co., Ltd.

- Basic information

Table 6.1-1 Basic info of Guangdong Runke Bioengineering Co., Ltd.

Address	XX
Website	XXX
Tel.	XXX
Fax	XXX
...	XXX

Source: Guangdong Runke Bioengineering Co., Ltd. & CCM

- Product portfolio (including capacity and output of microalgae DHA)

Table 6.1-2 Product portfolio of Guangdong Runke Bioengineering Co., Ltd., 2019

Product	Specification	Package
Microalgae DHA oil	XXX	XXX
XXX	XXX	XXX
...	XXX	XXX

Note: The capacity of microalgae DHA oil and microalgae DHA powder in the company was XX t/a and XX t/a respectively in 2019. And the output of microalgae DHA oil and microalgae DHA powder in 2019 was about XX tonnes and XXX tonnes respectively.

Source: CCM

- Financial analysis

Table 6.1-3 Balance sheet of Guangdong Runke Bioengineering Co., Ltd., as of 31 Dec., 2019

Item	USD
Cash and cash equivalents	XXX
Notes receivable	XXX
...	XXX
Total liabilities & shareholder's equity	XXX

Source: Guangdong Runke Bioengineering Co., Ltd.

Table 6.1-4 Income statement of Guangdong Runke Bioengineering Co., Ltd., 2019

Item	USD
Revenue	XXX
Cost of sales	XXX
...	XXX
Net profit	XXX

Source: Guangdong Runke Bioengineering Co., Ltd.

Table 6.1-5 Income statement of microalgae DHA in Guangdong Runke Bioengineering Co., Ltd., 2019

Item	USD
Revenue	XXX
...	XXX
Profit rate of microalgae DHA sales	XXX

Source: Guangdong Runke Bioengineering Co., Ltd.

- Manufacturing cost analysis

Table 6.1-6 Estimated manufacturing cost of microalgae DHA oil in Guangdong Runke Bioengineering Co., Ltd., 2019

Category	Item	Unit price, USD/t	Unit consumption, t/t (kWh/t)	Unit cost, USD/t
Direct cost	Glucose (XXX)	XXX	XXX	XXX
	Other raw materials	XXX	XXX	XXX
	...	XXX	XXX	XXX
Indirect cost	Staff salary	XXX	XXX	XXX
	...	XXX	XXX	XXX
	Other cost	XXX	XXX	XXX
Total				XXX

Source: CCM

...

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