



**Figure S1.** Cages used for the assessment of egg production with different adult densities. The useful area and volume for flies were 20,799.00 cm<sup>2</sup> and 148,076.75 cm<sup>3</sup>, respectively.



**Figure S2.** Larval diet with corn flour and carrageenan (CENA's diet) seeded with *Anastrepha fraterculus* eggs (at the left) and third instar larvae (at the right).



**Figure S3.** Larval diet based on corn flour (Embrapa's diet) seeded with *Anastrepha fraterculus* eggs (at the left) and appearance of the diet after larval development (at the right).

**Table S1.** Amount of ingredients and their costs to prepare 1 kg of a larval diet based on corn flour (Embrapa's diet) or corn flour and carrageenan (CENA's diet).

INGREDIENT	Embrapa's diet		CENA's diet	
	Quantity (for 1 kg of diet)	Cost (US\$) <sup>1</sup>	Quantity (for 1 kg of diet)	Cost (US\$)
Yellow corn flour Yoki®	300 g	0.28	60 g	0.053
Carrageenan Agargel®	---	---	6 g	0.17
Brewer's yeast Brewcell®	50 g	0.068	60 g	0.080
Sugar	30 g	0.043	60 g	0.089
Sodium benzoate	2 g	0.025	1 g	0.011
Nipagin solution 0.1%	2 mL	0.0028	8 mL	0.015
Citric acid	6 g	0.034	---	---
Hydrochloric acid	---	---	4 mL	0.020
Water	1120 mL	0.00289	800 mL	0.002
<b>Total (US\$)</b>		<b>0.46</b>		<b>0.44</b>

<sup>1</sup> Individual cost of each ingredient = [(quantity of the ingredient for 1 kg of diet) × (US\$/kg or liter of the ingredient)] ÷ 10<sup>3</sup>. \* Ingredients to prepare 1 kg of the larval diet proposed previously by Walder et al. [17]: 60 g of wheat germ (US\$ 0.103), 3.4 g of agar (US\$ 0.20), 60 g of brewer's yeast (US\$ 0.08), 60 g of sugar (US\$ 0.089), 1 g of sodium benzoate (US\$ 0.011), 8 mL of Nipagin solution 0.1% (US\$ 0.015), 4 mL of hydrochloric acid (US\$ 0.02) and 800 mL of water (US\$ 0.002).

**Table S2.** Nutritional content of the main raw ingredients (according to suppliers' information) and their approximate contribution to larval diets from Embrapa and CENA.

INGREDIENT			NUTRIENTS (g/kg)					
			Crude protein	Total carbohydrates	Total Fat	Fibers	Minerals	Vitamins
Brewer's yeast Brewcell®			503	not declared	2	30	80	not declared
Yellow corn flour Yoki®			72	820	12	38	not declared	not declared
Sugar Caravelas®			0	1,000	0	not declared	0	not declared
DIET	Embrapa	Total (g/kg)	46.8 <sup>1</sup>	276.0 <sup>4</sup>	3.7 <sup>6</sup>	12.9 <sup>8</sup>	4.0 <sup>10</sup>	unknow
		% (w/w) <sup>2</sup>	4.7	27.6	0.37	1.29	0.4	unknow
	CENA	Total (g/kg)	34.5 <sup>3</sup>	109.2 <sup>5</sup>	0.84 <sup>7</sup>	4.08 <sup>9</sup>	4.8 <sup>11</sup>	unknow
		% (w/w)	3.5	10.92	0.084	0.41	0.48	unknow

<sup>1</sup> Total estimated protein input (g/kg of diet) = [(503 × 50) ÷ 10<sup>3</sup>] + [(72 × 300) ÷ 10<sup>3</sup>] + 0. <sup>2</sup> Percentage of the nutrient in 1 kg of diet = (total ingredient input (g/kg) × 100) ÷ 10<sup>3</sup>. <sup>3</sup> Total estimated protein input (g/kg of diet) = [(503 × 60) ÷ 10<sup>3</sup>] + [(72 × 60) ÷ 10<sup>3</sup>] + 0. <sup>4</sup> Total estimated carbohydrate input (g/kg of diet) = 0 + [(820 × 300) ÷ 10<sup>3</sup>] + [(10<sup>3</sup> × 30) ÷ 10<sup>3</sup>]. <sup>5</sup> Total estimated carbohydrate input (g/kg of diet) = 0 + [(820 × 60) ÷ 10<sup>3</sup>] + [(10<sup>3</sup> × 60) ÷ 10<sup>3</sup>]. <sup>6</sup> Total estimated lipid input (g/kg of diet) = [(2 × 50) ÷ 10<sup>3</sup>] + [(12 × 300) ÷ 10<sup>3</sup>].

$\div 10^3] + 0$ . <sup>7</sup> Total estimated lipid input (g/kg of diet) =  $[(2 \times 60) \div 10^3] + [(12 \times 60) \div 10^3] + 0$ . <sup>8</sup> Total estimated fiber input (g/kg of diet) =  $[(30 \times 50) \div 10^3] + [(38 \times 300) \div 10^3]$ . <sup>9</sup> Total estimated fiber input (g/kg of diet) =  $[(30 \times 60) \div 10^3] + [(38 \times 60) \div 10^3]$ . <sup>10</sup> Total estimated mineral input (g/kg of diet) =  $(80 \times 50) \div 10^3$ . <sup>11</sup> Total estimated mineral input (g/kg of diet) =  $(80 \times 60) \div 10^3$ .