

The story never ends: larval development of *Ceratitis capitata* (Diptera: Tephritidae), Vienna 8 *tsl* strain, on different diets- looking for savings.

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Introduction

The larval diet cost and yield pupae are one of the key points in a SIT program. Local ingredients that give higher number of recovered pupae are highly desired. Among the key ingredients in a diet, such as, bulking agent, sugar, preservatives and protein, the last one can make the difference on the quality of insects mass reared.

Materials and methods

Four diets with protein sources in different quantities were tested: 1) yeast + wheat flour + wheat germ ; 2) yeast + wheat germ; 3) yeast; and 4) yeast + soybean flour. It was carried out 5 repetitions with 1000 eggs in 200 g for each larval diet, held at $23 \pm 2^\circ\text{C}$ and $70 \pm 10\%$ RH. Third instar larvae were collected from 9th to 13rd days after eggs have been seeded. It was observed the egg-pupae recovery, the emergence and flyers percentage, pupae weight, and the proportion of female and male (white and brown pupae, respectively) in each diet.



Table 1: Formulations of larval diet of *C. capitata*, Vienna 8 - *tsl* strains.

Ingredients	Medfly larval diet (%)			
	Diet 1	Diet 2	Diet 3	Diet 4
Sugar Cane Bagasse	13,38	14,80	19,00	13,40
Wheat Flour	3,79	0,00	0,00	0,00
Soy Flour	0,00	0,00	0,00	8,24
Wheat Germ	3,79	4,00	0,00	0,00
Crystal Sugar	11,38	11,90	12,00	8,24
Brewer's Yeast	8,53	8,90	9,00	8,24
Methylparaben (Nipagin)	0,00	0,00	0,40	0,24
Sodium Benzoate	0,28	0,27	0,30	0,20
Citric Acid	1,70	1,70	1,30	1,70
Tetracycline	0,02	0,00	0,00	0,00
Filtered Water	57,13	58,40	58,00	59,74
Total	100	100	100	100

Results and Discussion

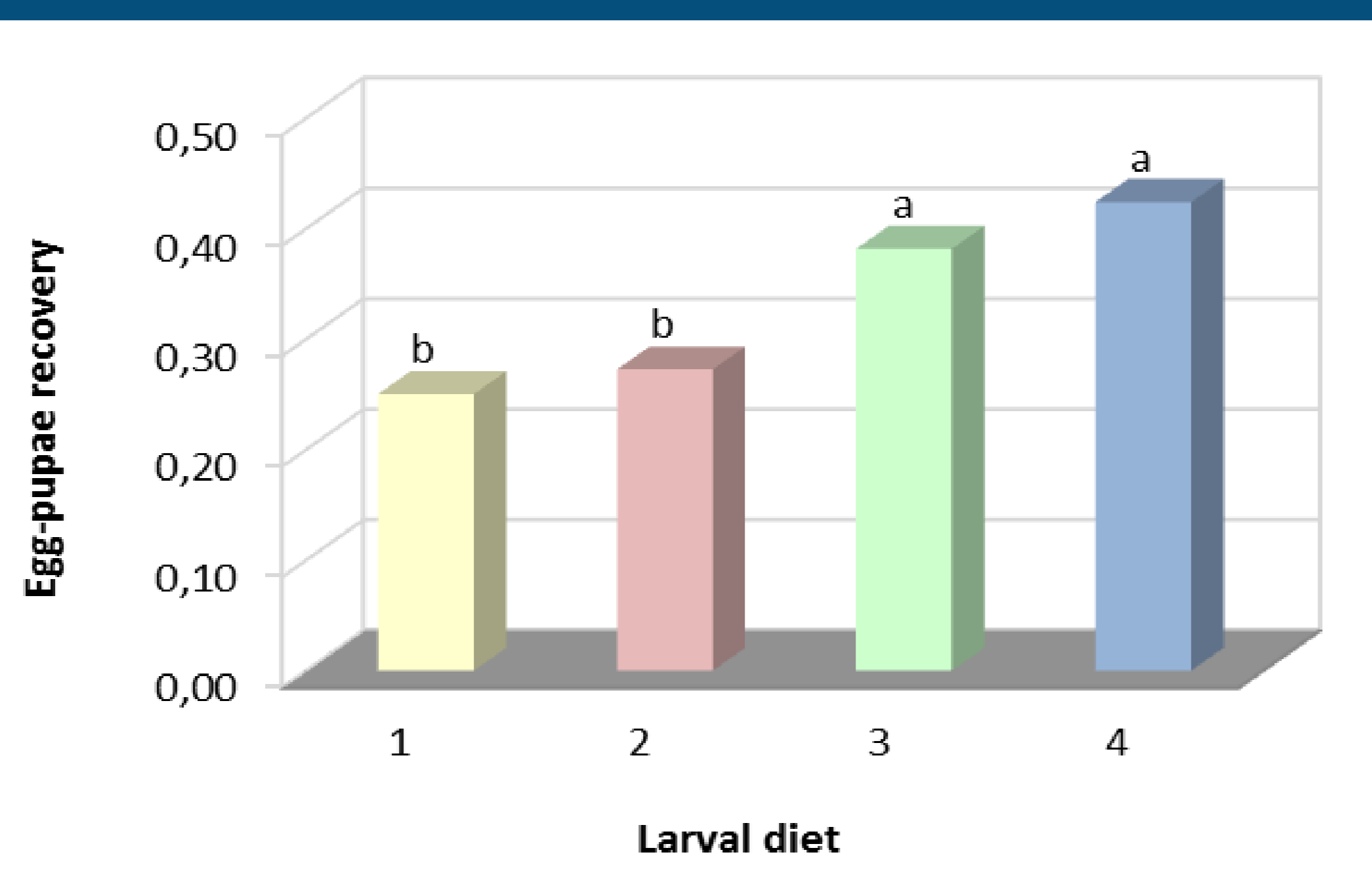


Fig.1. Egg-pupae recovery in four larval diet of *C. capitata*. Columns with different letters showed statistical differences (Tukey test, $\alpha = 0.05$).

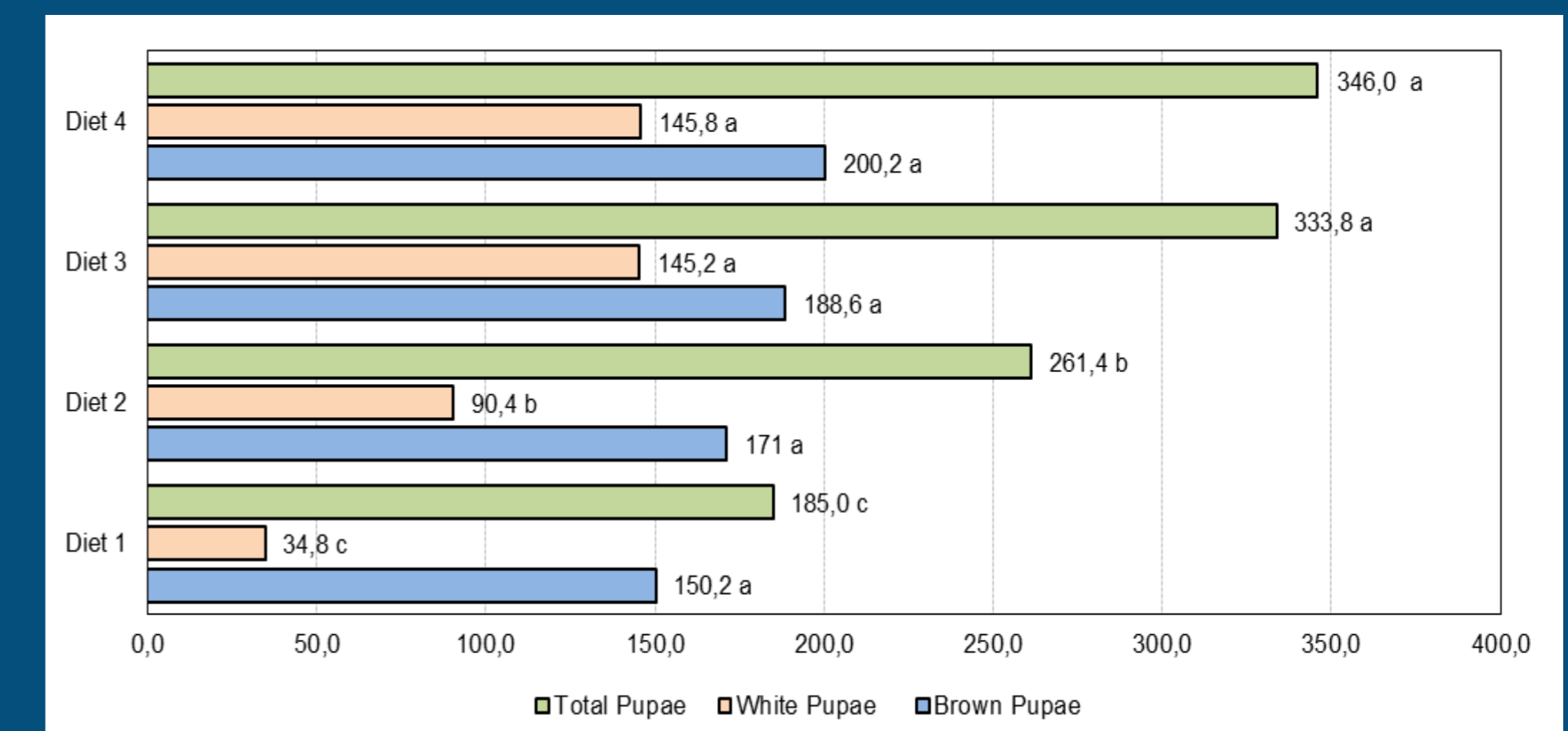


Fig.2. Males (brown) and females (white) pupae quantity in four larval diet of *C. capitata*. Columns with different letters showed statistical differences (Tukey test, $\alpha = 0.05$).

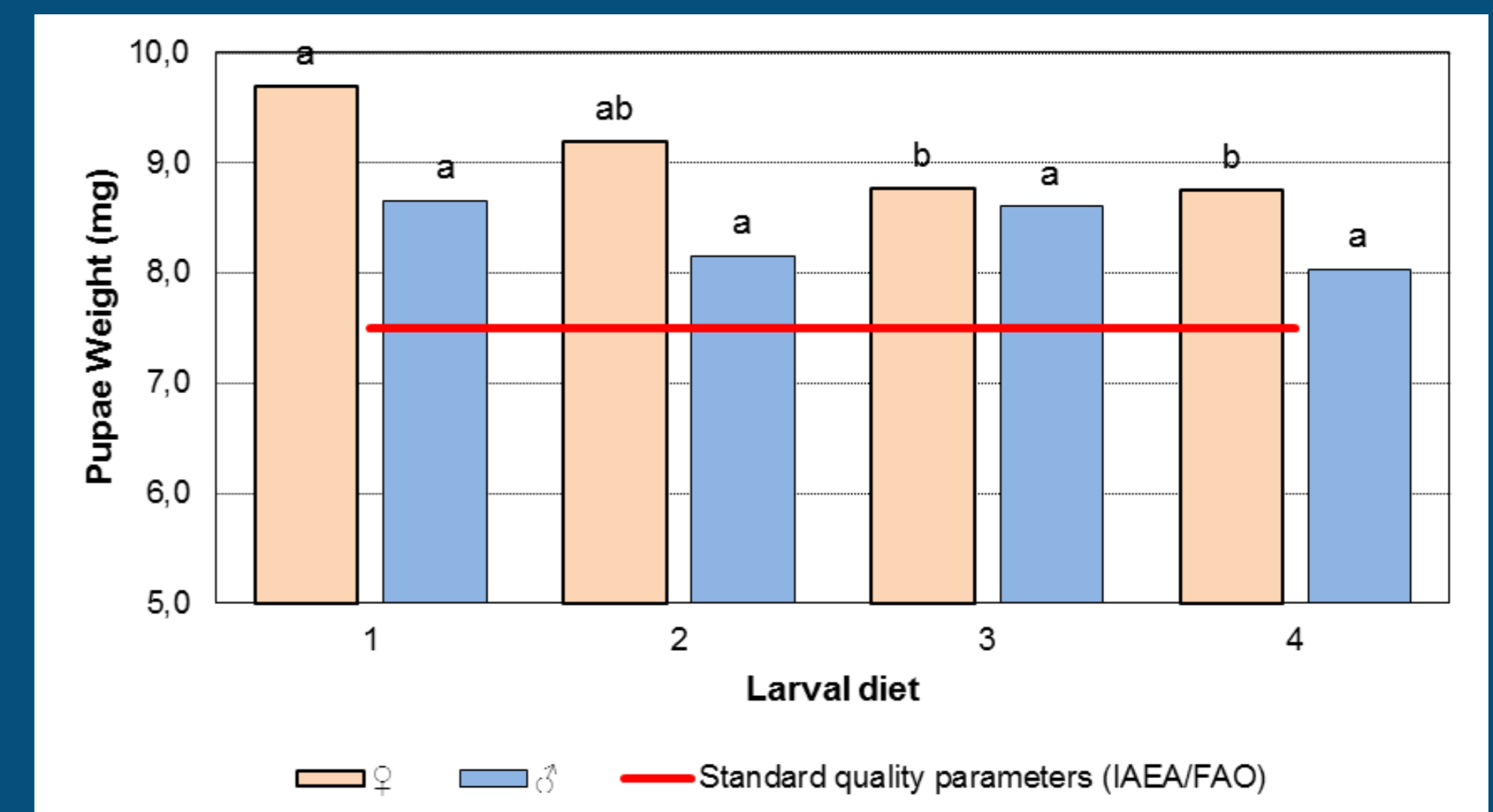


Fig.3. Pupa weight in four larval diet of *C. capitata*. Columns with different letters showed statistical differences (Tukey test, $\alpha = 0.05$).

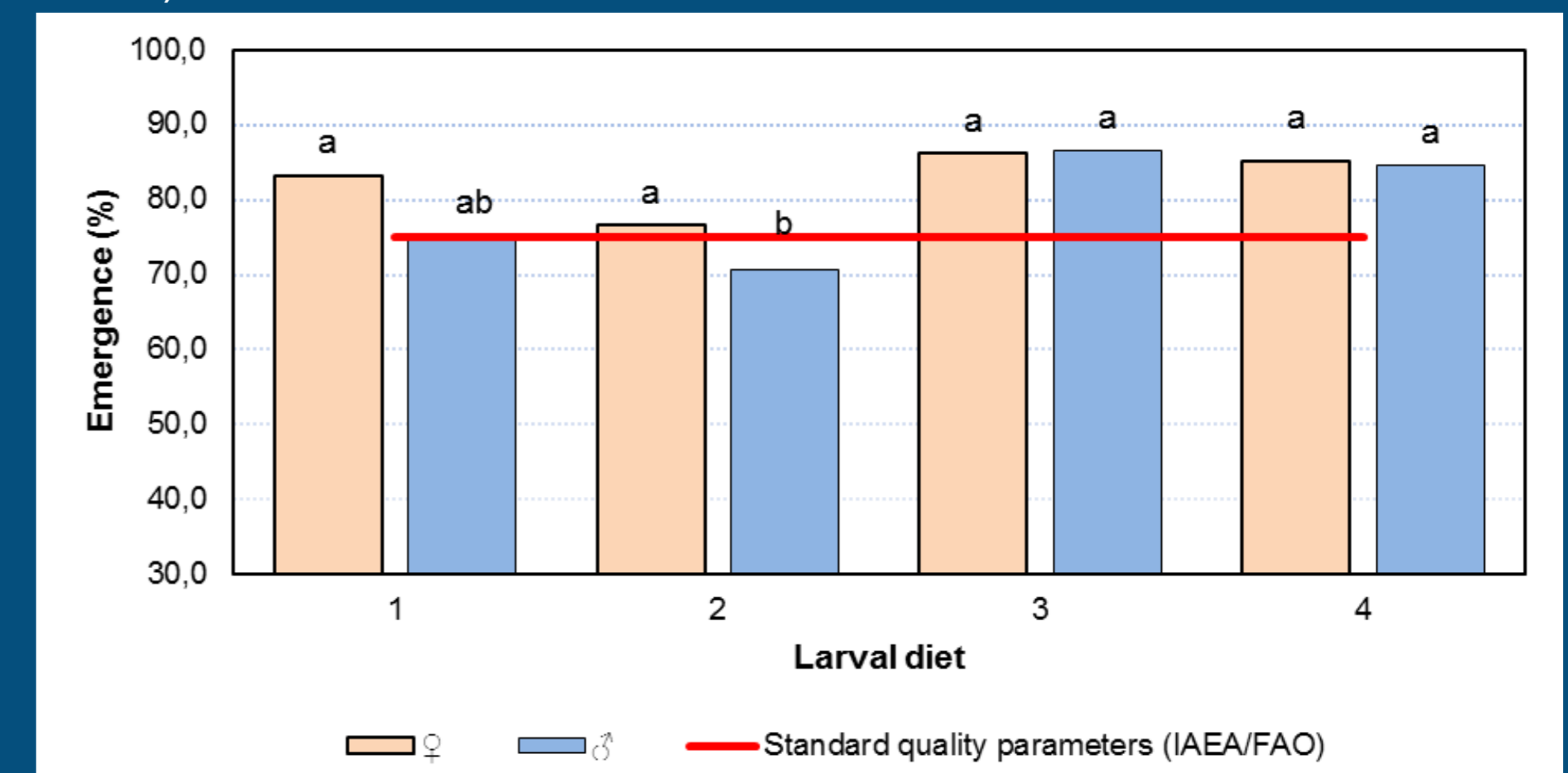


Fig.4. Adults emergence in four larval diet of *C. capitata*. Columns with different letters showed statistical differences (Tukey test, $\alpha = 0.05$).

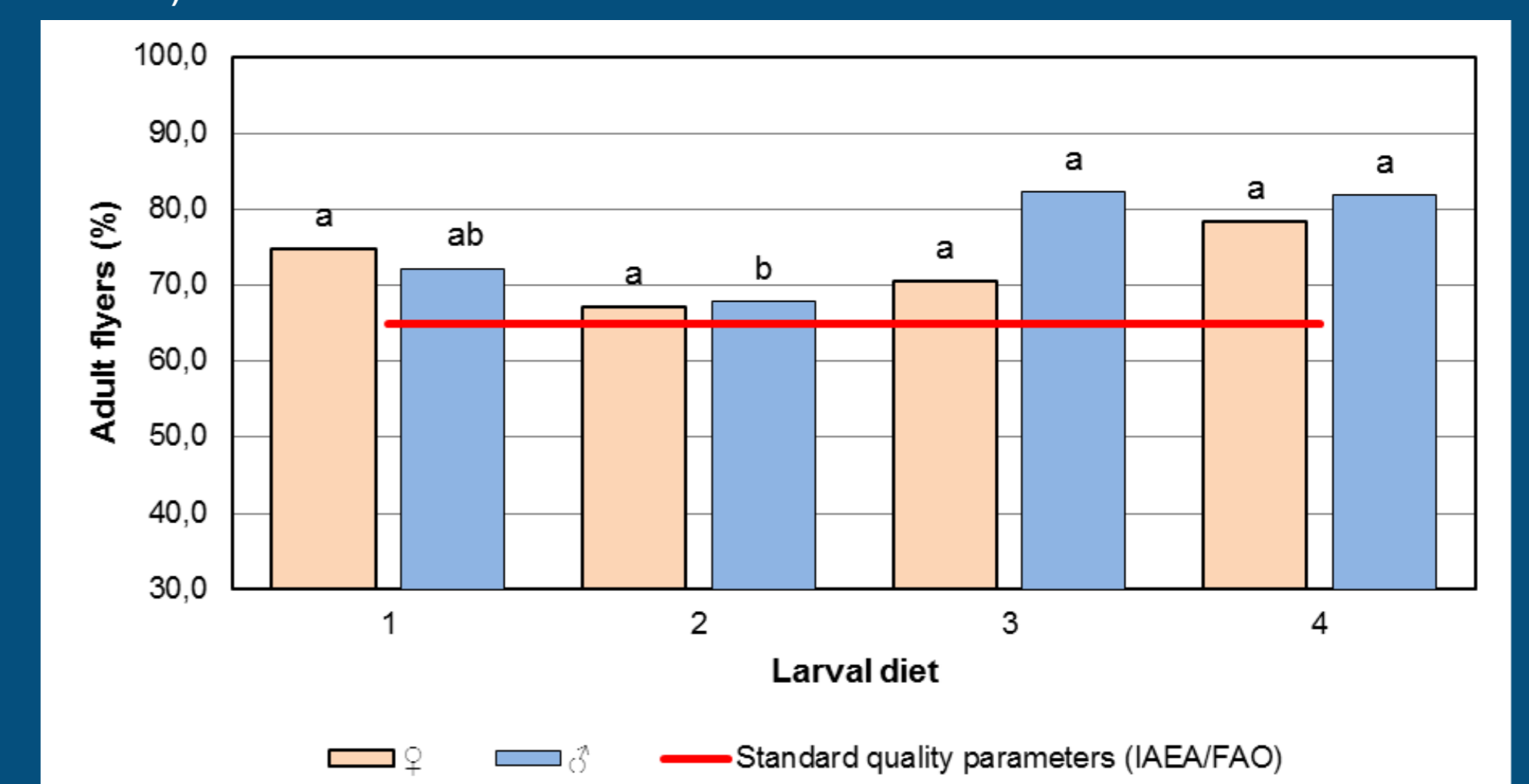


Fig.5. Adults flyers in four larval diet of *C. capitata*. Columns with different letters showed statistical differences (Tukey test, $\alpha = 0.05$).

Conclusions

✓ The yielded pupae (Fig. 1) and the proportion of females (white pupae), obtained from diets 3 and 4 (Fig. 2), are highly desired in *C. capitata*, Vienna 8 - *tsl* strain.

✓ Diets 3 and 4 showed excellent quality parameters (Fig. 3, 4, 5). However, diet 3 has less protein than diet 4 what can affect the fecundity and fertility of adults. Then, we suggest additional studies with female adults concerning these parameters.

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