

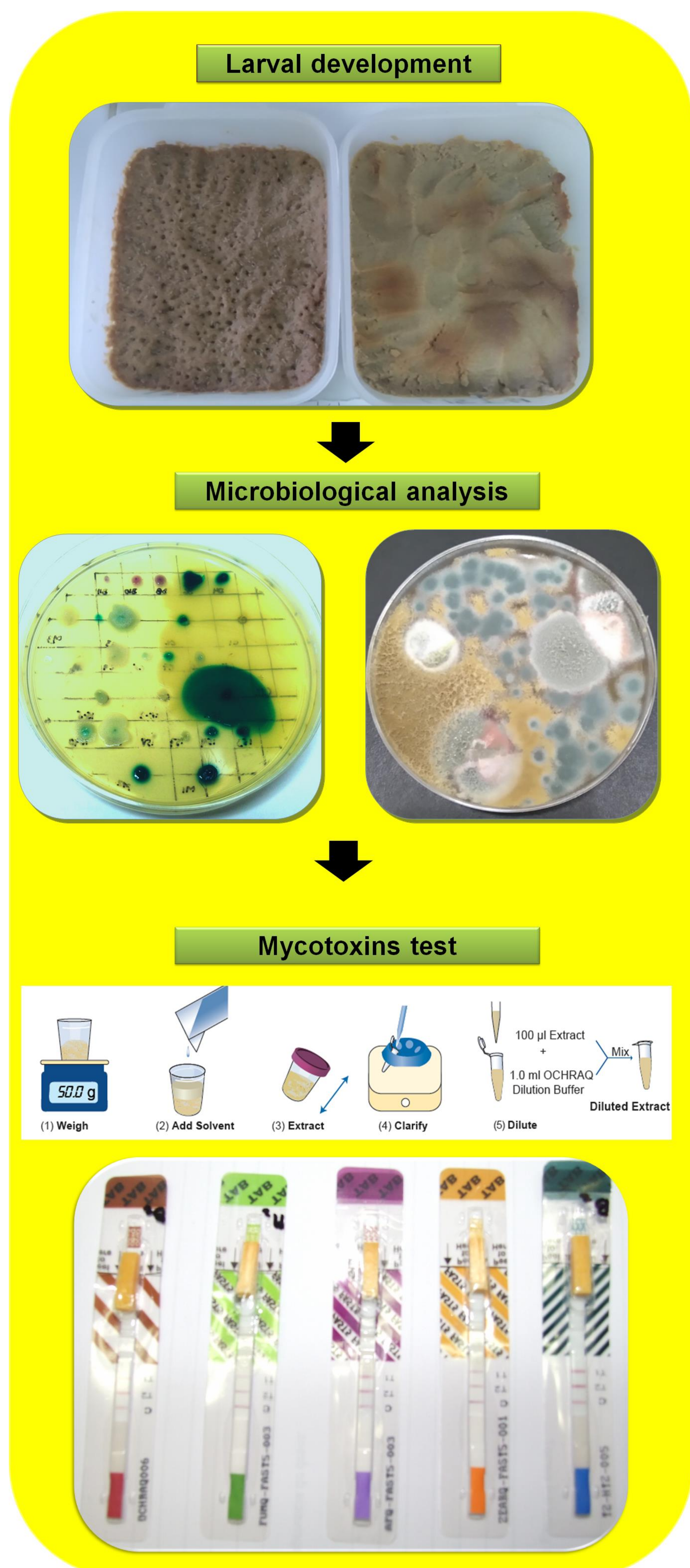
A Novel Approach for Quality Assurance of Bulking Agents for Larval Mass-Rearing of *Anastrepha ludens*: Mycotoxins Content.

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INTRODUCTION

The quality control of diet is one of the critical and costly aspects to implement the SIT. Currently the quality parameters of insects produced are well established; while the parameters of quality of ingredients are defined according to the historical characteristics of the product, but not focused to the nutritional needs and micro-environmental that allows the larval development. Corn cob powder is the main bulking agent used in the artificial larval diet of fruit flies of the genus *Anastrepha*. Previous experiments indicated that evaluation and acceptance regulations established as quality parameters cannot assure quality product. The occurrence of mycotoxins, particularly, in cereal derivate, could represent a source of toxicity for insects. The objective of this study was to evaluate whether the content of mycotoxins in various bulking agents can be a reliable parameter of quality for the proper selection of the ingredients for larval diet.

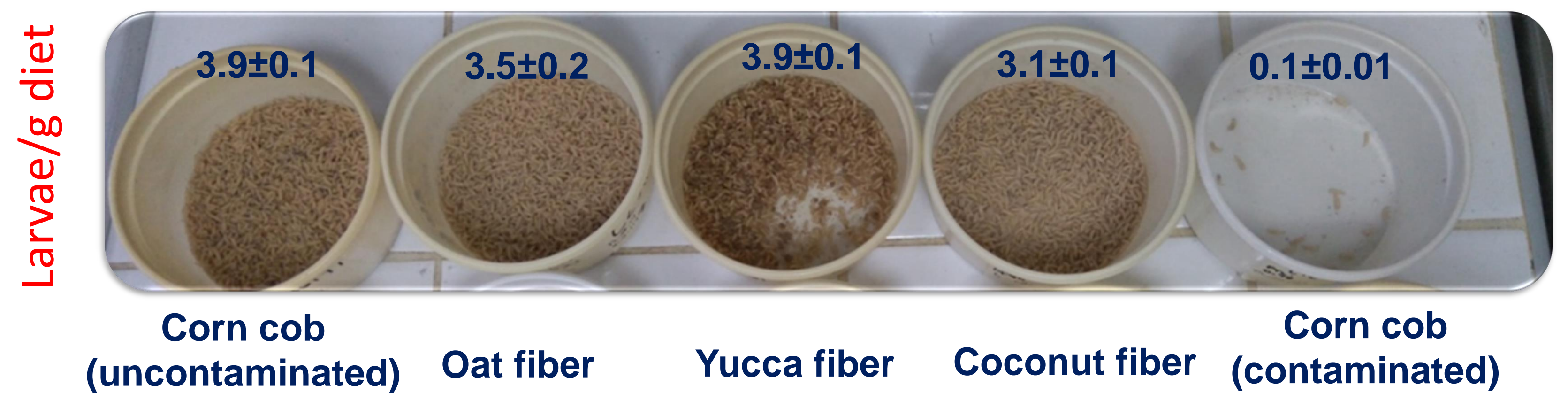
MATERIALS & METHODS



RESULTS

Bulking agent	AFLA (ppb)	FUM (ppm)	OTA (ppb)	T2/TH2 (ppb)	ZEN (ppb)	DON (ppm)
Corn cob powder (uncontaminated)	0±0.0b	1.0±0.2b	0±0.0b	0±0.0b	102.0±32.7a	1.2±0.6a
Corn cob powder (contaminated)	9.5±2.0a	2.4±0.8a	1.0±0.0a	1.0±0.0a	106.9±30.5a	0.7±0.5a
Yucca fiber	0±0.0b	1.1±0.2b	0±0.0b	0±0.0b	32.0±12.4b	0.2±0.3a
Coconut fiber	0±0.0b	1.1±0.7a	0±0.0b	0±0.0b	0±0.0c	0±0.0b
Oat fiber	0±0.0b	1.3±0.1b	0±0.0b	0±0.0b	12.0±8.4d	0.1±0.2a

Values followed by a different letter (s) in the same column are significantly different ($\alpha=0.05$). AFLA: Aflatoxin, FUM: Fumonisin, OTA: Ochratoxin, ZEN: Zearalenone, DON: Deoxynivalenol.



Bulking agent	Larval weight (mg)	Pupation 24 h (%)	Pupal weight (mg)	Fliers (%)
Coconut fiber	24.9±0.6d	72.5±8.3b	18.5±0.2c	79.7±0.8a
Corn cob powder (contaminated)	7.9±0.4bcd	12.3±0.7a	21.2±0.2b	8.2±1.0a
Yucca Fiber	24.9±0.5d	90.3±0.4a	20.5±0.0.3b	82.2±1.3a
Oat fiber	25.3±0.2d	89.4±0.5a	20.0±0.2bc	80.5±1.5a
Corn cob powder (uncontaminated)	29.0±0.7abc	90.4±0.8a	20.3±0.3b	81.8±1.0a

Values followed by a different letter (s) in the same column are significantly different ($\alpha=0.05$).

CONCLUSIONS

It is important to consider incorporating new quality parameters that can relate to the quality of an ingredient with agents that can cause larval mortality and that cannot be detected by conventional quality parameters.