

Integrative taxonomy of *Frankliniella schultzei* Trybom (Thysanoptera: Thripidae) colour forms in Kenya

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INTRODUCTION

Frankliniella schultzei Trybom, a key crop pest of French beans and other vegetables, causes worldwide economic losses through direct damage and as a vector of tospoviruses. In Kenya, *F. schultzei* displays two colour forms (dark and pale) with similar morphological features and overlapping habitats. These differences are undocumented at the morphological, molecular, and biological levels.



Figure 1: Colour forms of *F. schultzei*: dark (left) and pale (right)

OBJECTIVES

- To distinguish the two colour forms of *F. schultzei* using two subtle morphological features: ITS2-RFLP, and sequence analysis.
- To evaluate if there is a potential for interbreeding between the two colour forms.

METHODS

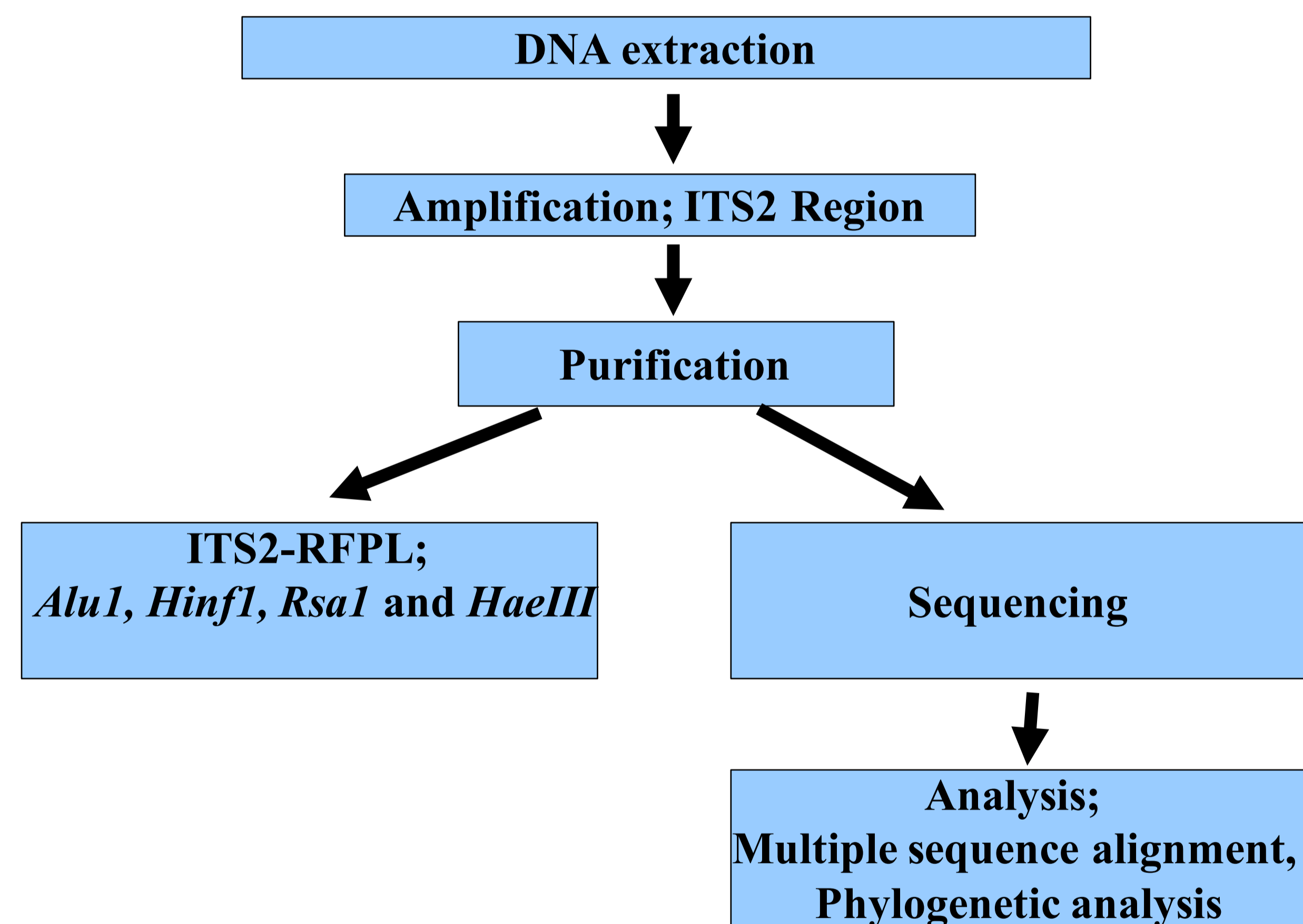


Figure 2a: Molecular biological experimental design

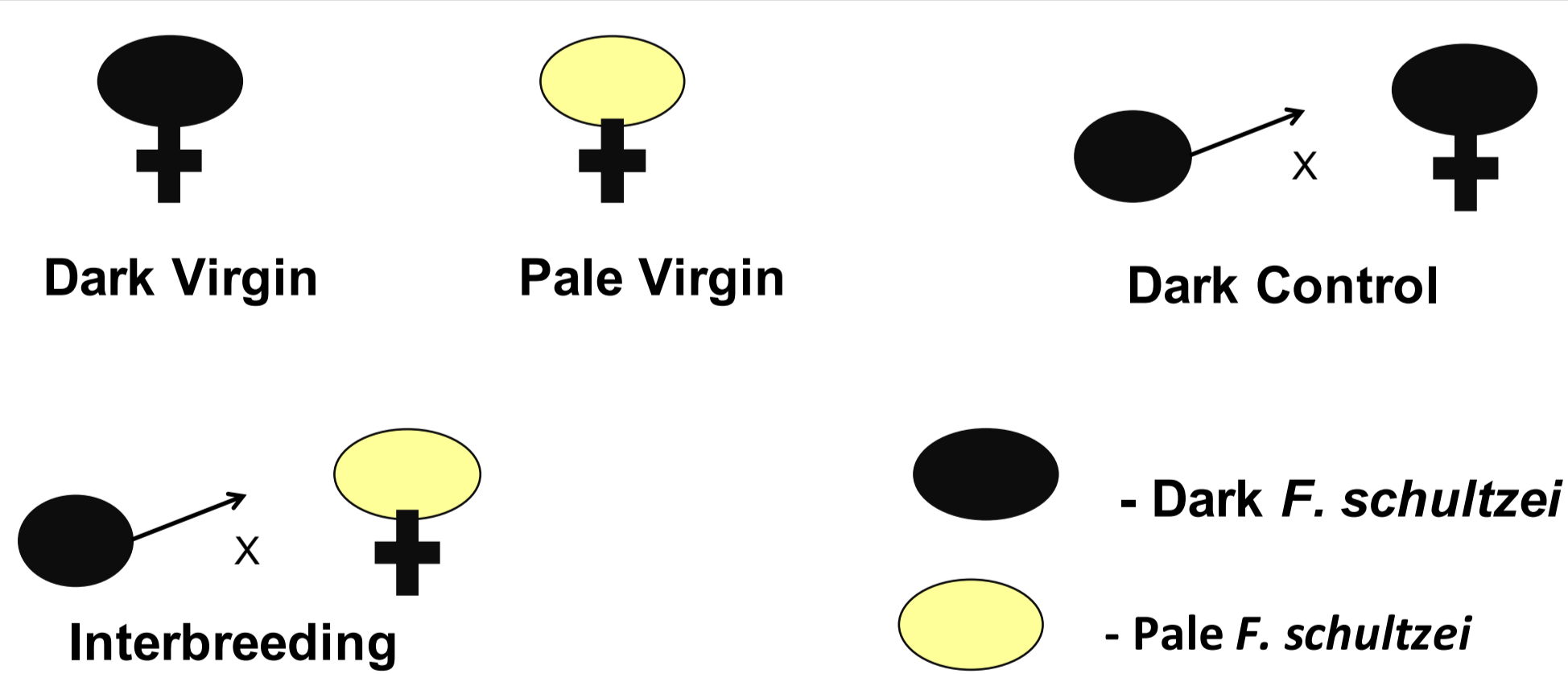


Figure 2b: Interbreeding potential experimental design

IMPACT AND CONCLUSION

Although the dark and pale forms of *F. schultzei* may appear alike, each form:

- Has subtle but significant morphological differences,
- Exhibits distinct differences at molecular level,
- Exhibits no interbreeding.

RESULTS

Morphological differences

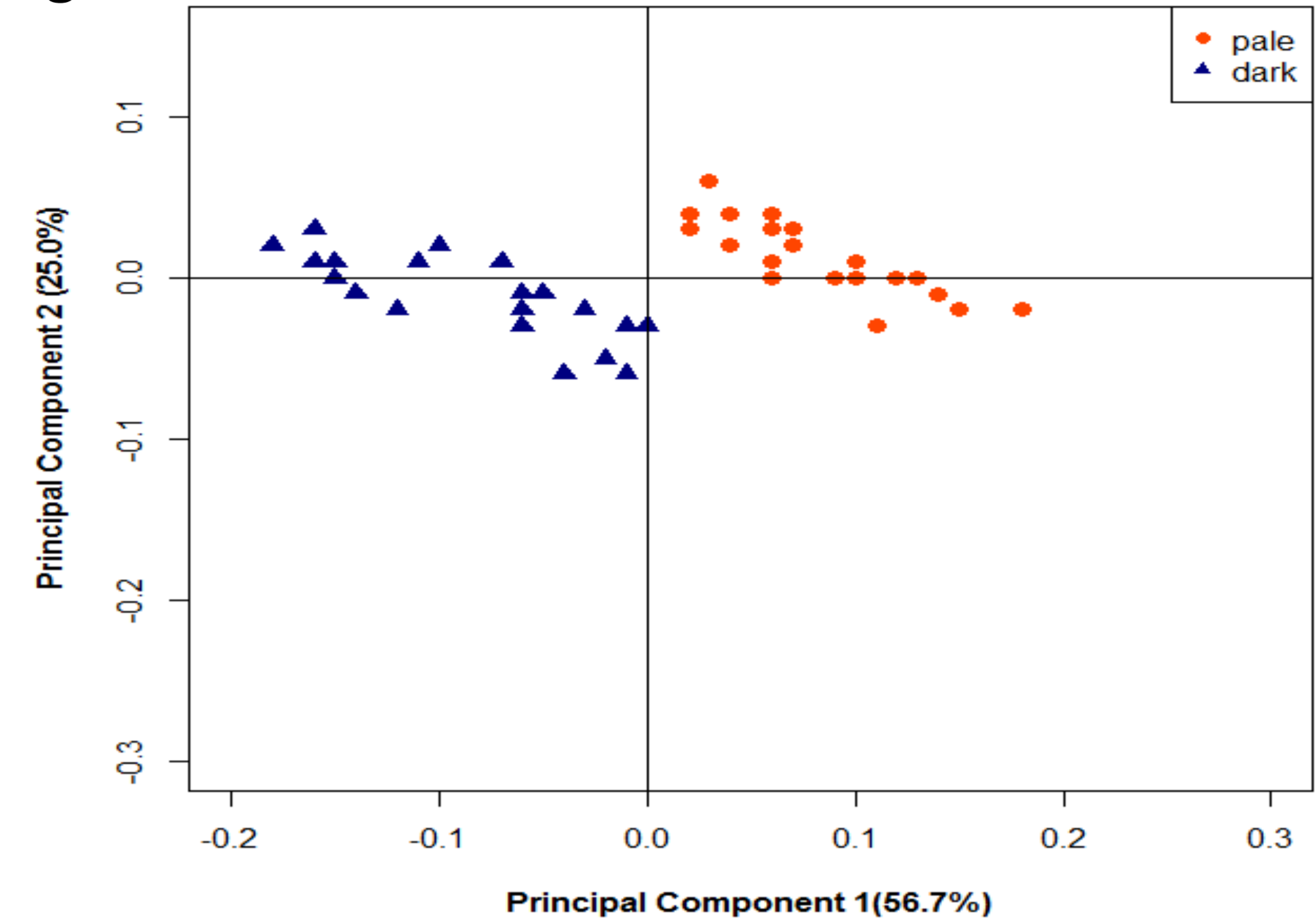


Figure 2: PCA showing differences in morphological features between dark and pale *F. schultzei*

Molecular differences

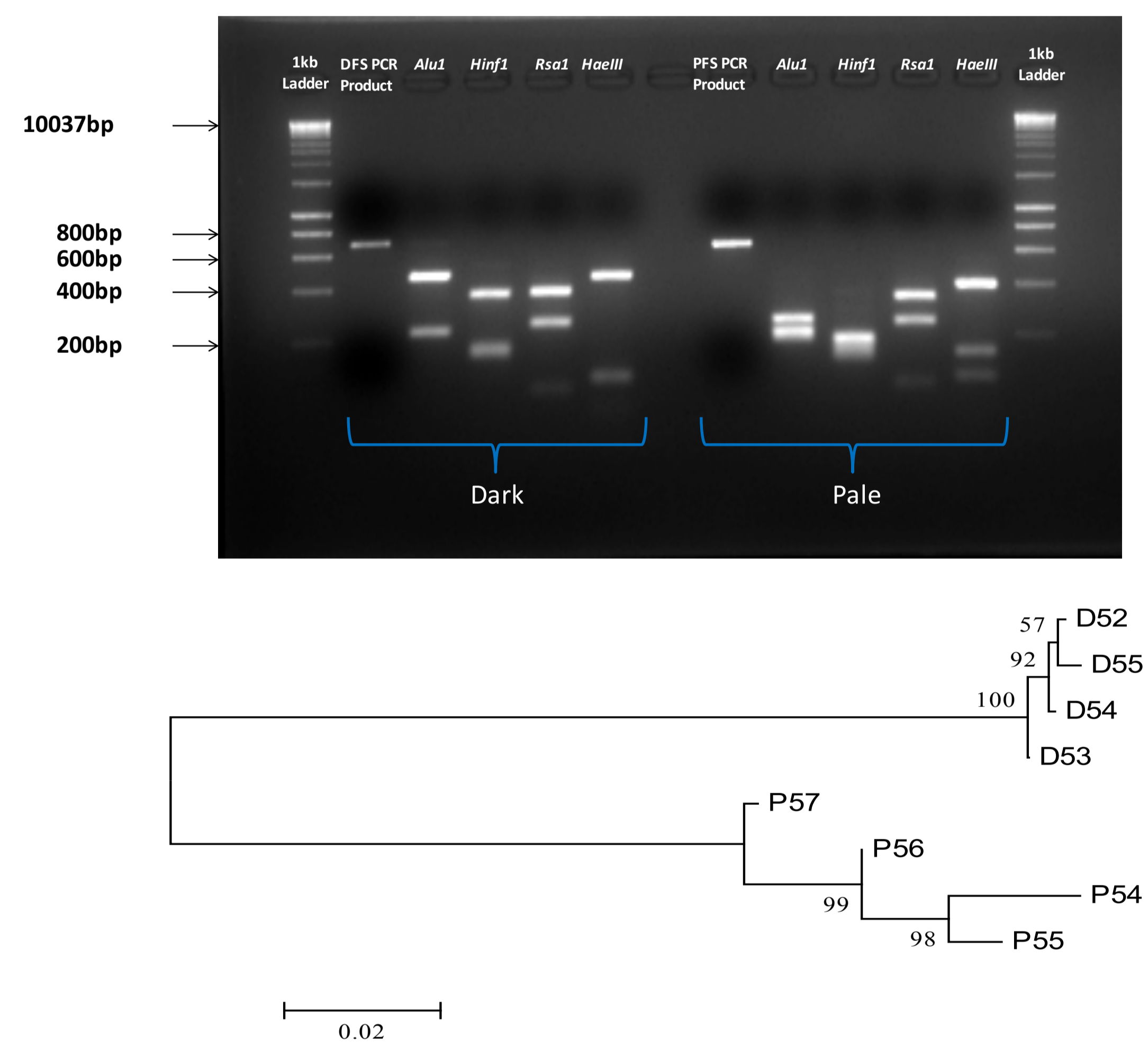


Figure 3: ITS2-RFLP and phylogenetic differences between the two colour forms

Biological characterization

	F ₁ offspring sex	F ₁ sex ratio (Male: Female)	Colour of F ₁	Setae length and distance from tangent
♀	All male	1:0	Dark	Similar to parent
♀	All female	0:1	Pale	Similar to parent
♂ x ♀	Male and female	1:1	Dark	Similar to parents
♂ x ♀	All female	0:1	Pale	Similar to pale mother

Figure 4: Differences in interbreeding between the two colour forms

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