

Rotations for managing Fusarium wilt

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Introduction

Fusarium wilt of cotton caused by *Fusarium oxysporum f.sp vasinfec-tum* remains an economic constraint to cotton production. The pathogen remains indefinitely in the soil so using rotations as a management tool may be limited. Our research does suggest, however, that some rotations do result in reduced disease and increased yields.

Methods

A 3 year irrigated field trial near Cecil Plains on the Darling Downs investigated the influence of different rotation crops and their residues on subsequent disease development in cotton grown across the entire trial in the final year.

Acknowledgements

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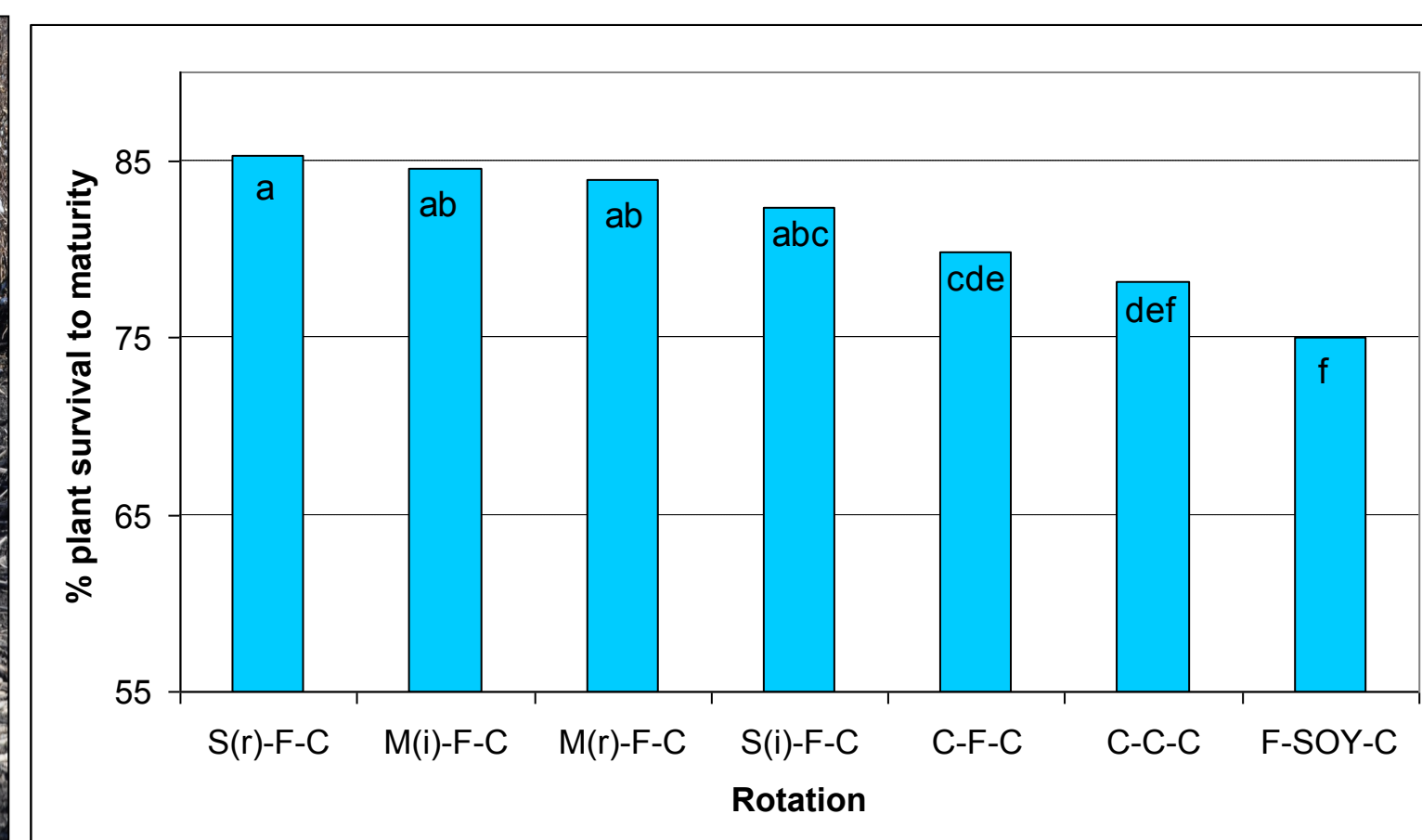
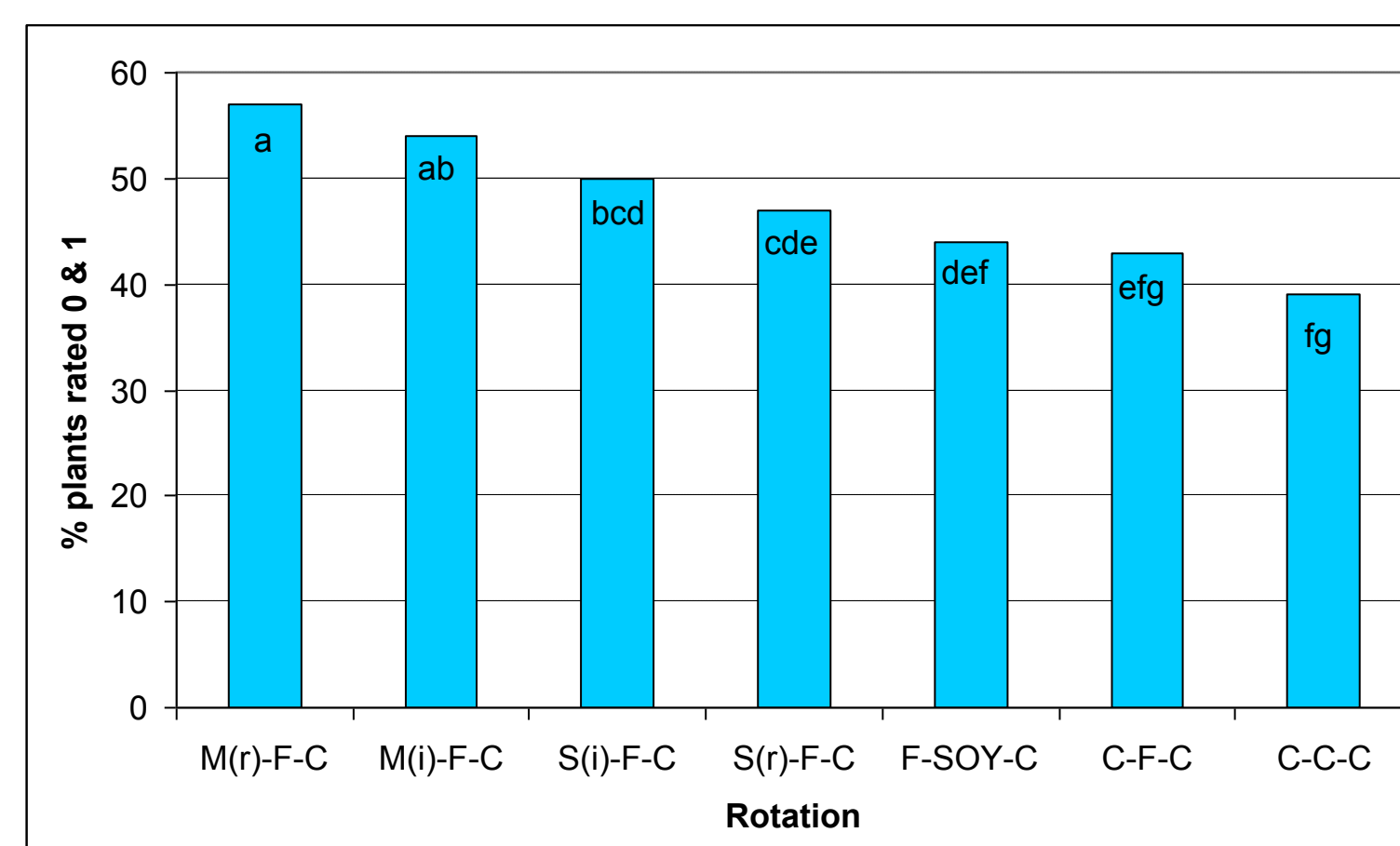


Figure 1: Effect of rotation on % plant survival in final cotton crop.

Treatments followed by the same letter are not significantly different

M=maize (r, retain or i, incorporate residues), S=sorghum (r, retain or i, incorporate residues), F=bare fallow, C=cotton, SOY=soybean

A significantly greater number of plants survived to maturity in rotations where maize and sorghum were grown compared to a fallow-soybean-cotton rotation and 3 years of continuous cotton.



A maize (incorporated & retained)-fallow-cotton rotation significantly reduced the % of plants with disease compared to cotton-fallow-cotton and 3 years of continuous cotton.

Figure 2: Effect of rotation on % plants rating 0 & 1 (plants with <5% vascular stem discolouration) in final cotton crop.

Treatments followed by the same letter are not significantly different

M=maize (r, retain or i, incorporate residues), S=sorghum (r, retain or i, incorporate residues), F=bare fallow, C=cotton, SOY=soybean

Three years of continuous cotton yielded significantly less than all other rotations except for fallow-soybean-cotton and maize (incorporated)-fallow-cotton.

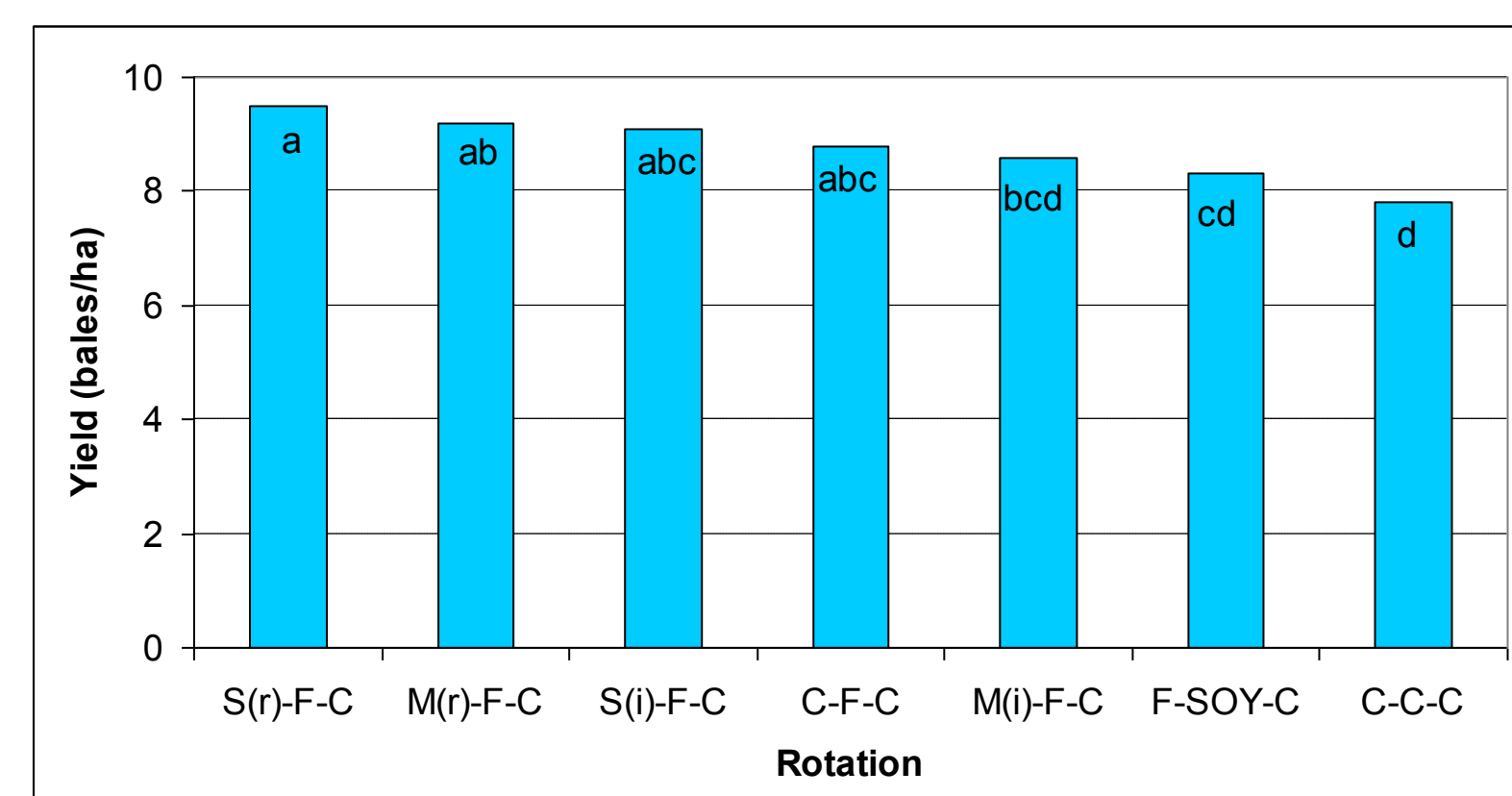


Figure 3: Effect of rotation on yield (bales/ha) in the final cotton crop.

Treatments followed by the same letter are not significantly different

M=maize (r, retain or i, incorporate residues), S=sorghum (r, retain or i, incorporate residues), F=bare fallow, C=cotton, SOY=soybean