

Shauna G. Chesney¹, Bruce D. Gossen² & Mary Ruth McDonald¹

¹Department of Plant Agriculture, University of Guelph, Guelph, ON ²Agriculture and Agri-Food Canada, Saskatoon, SK



Figure 1: Clubroot on canola

INTRODUCTION

What is clubroot?

- Soil-borne pathogen *Plasmodiophora brassicae*

Management?

- Application of agricultural lime or moderate rates of boron can suppress clubroot severity

Why is it a problem?

- Causes high yield losses in canola
- New, virulent pathotypes that overcome resistance

Objective: Determine if there is an interaction between application of lime and boron in suppressing clubroot

METHODS

Trial 1: Fall & spring application of lime

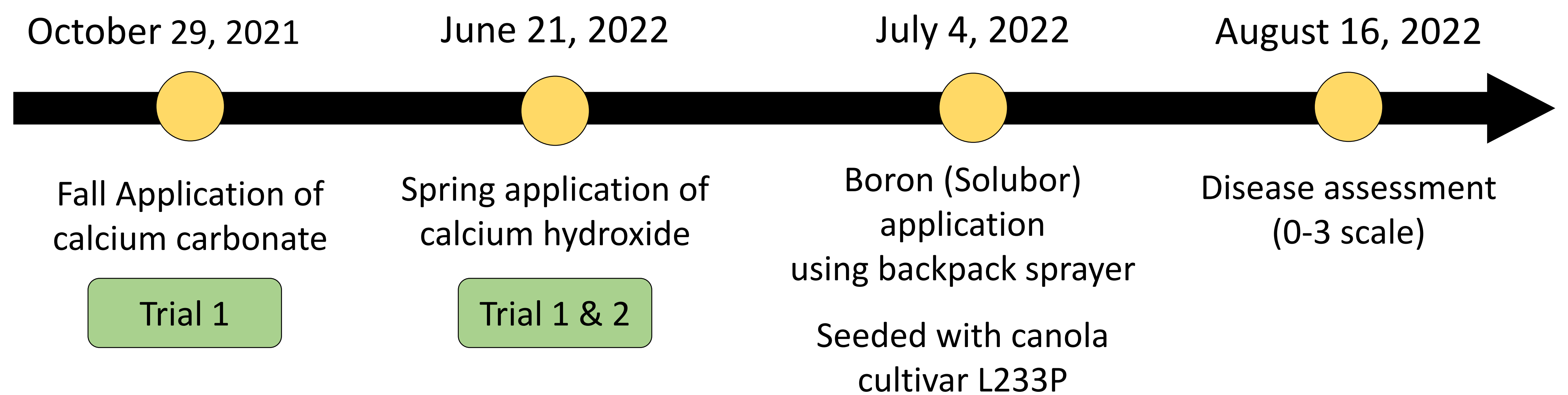
Trial 2: Spring application of lime

Factorial design (Lime and Boron)

Soil type: High organic matter (muck)

Treatments:

- Lime vs. non amended
- pH target (7.0 & 7.5)
- Boron at 0 or 16 kg B/ha



RESULTS

Table 1. The effect of lime and boron on disease severity index on canola

Lime (pH target)	Fall/Spring applied	Spring applied	Fall/Spring applied	Spring applied
	Disease severity index (%)		Actual pH	
Non-amended	64 a	73 a	6.5	6.8
7.0	21 b	40 b	7.1	7.6
7.5	24 b	41 b	7.3	7.4
Boron (kg/ha)				
0	32 a	58 a		
16	41 a	45 b		

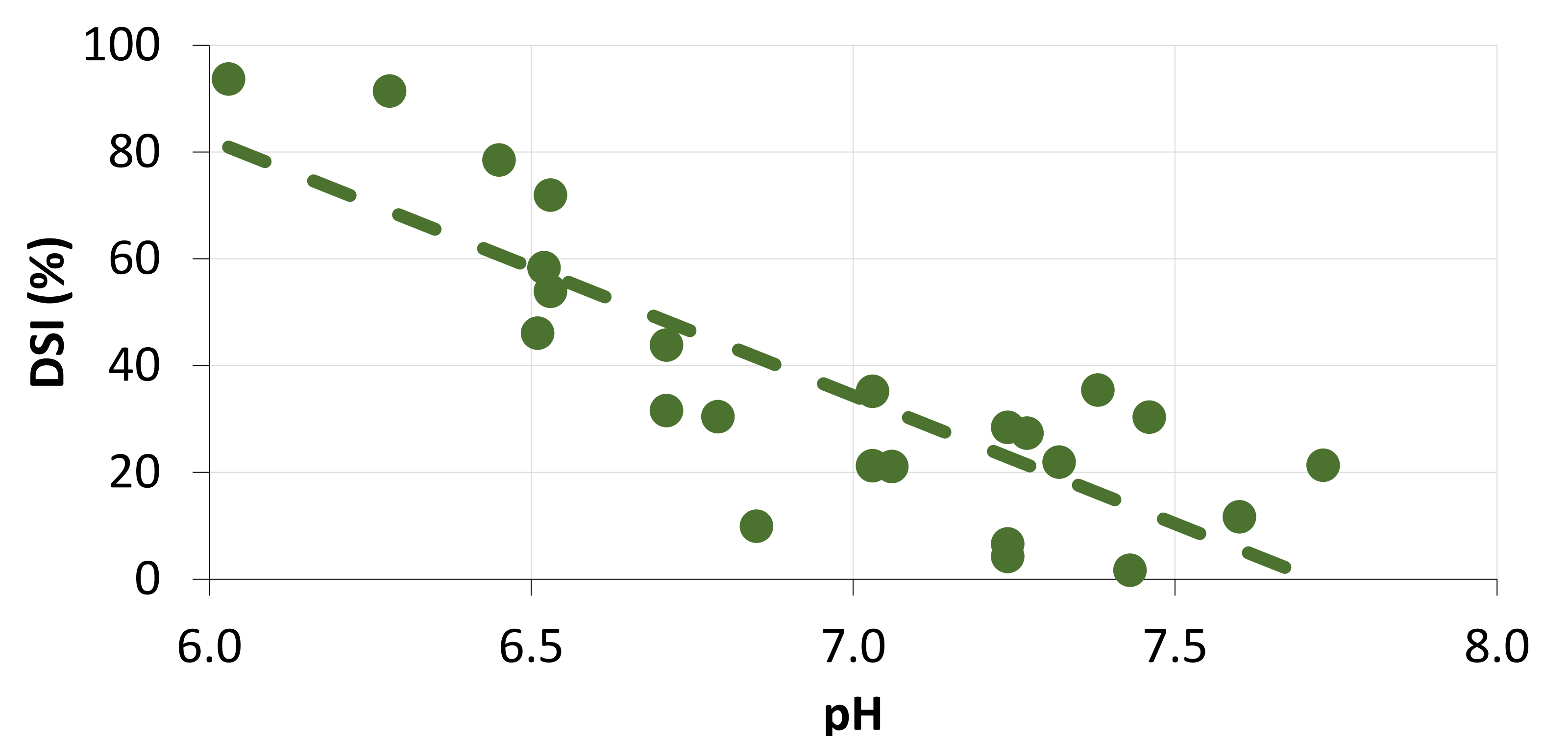


Figure 2: Disease severity index (DSI) in relation to pH in the interaction of boron and fall/spring applied lime ($r^2=-0.75$)

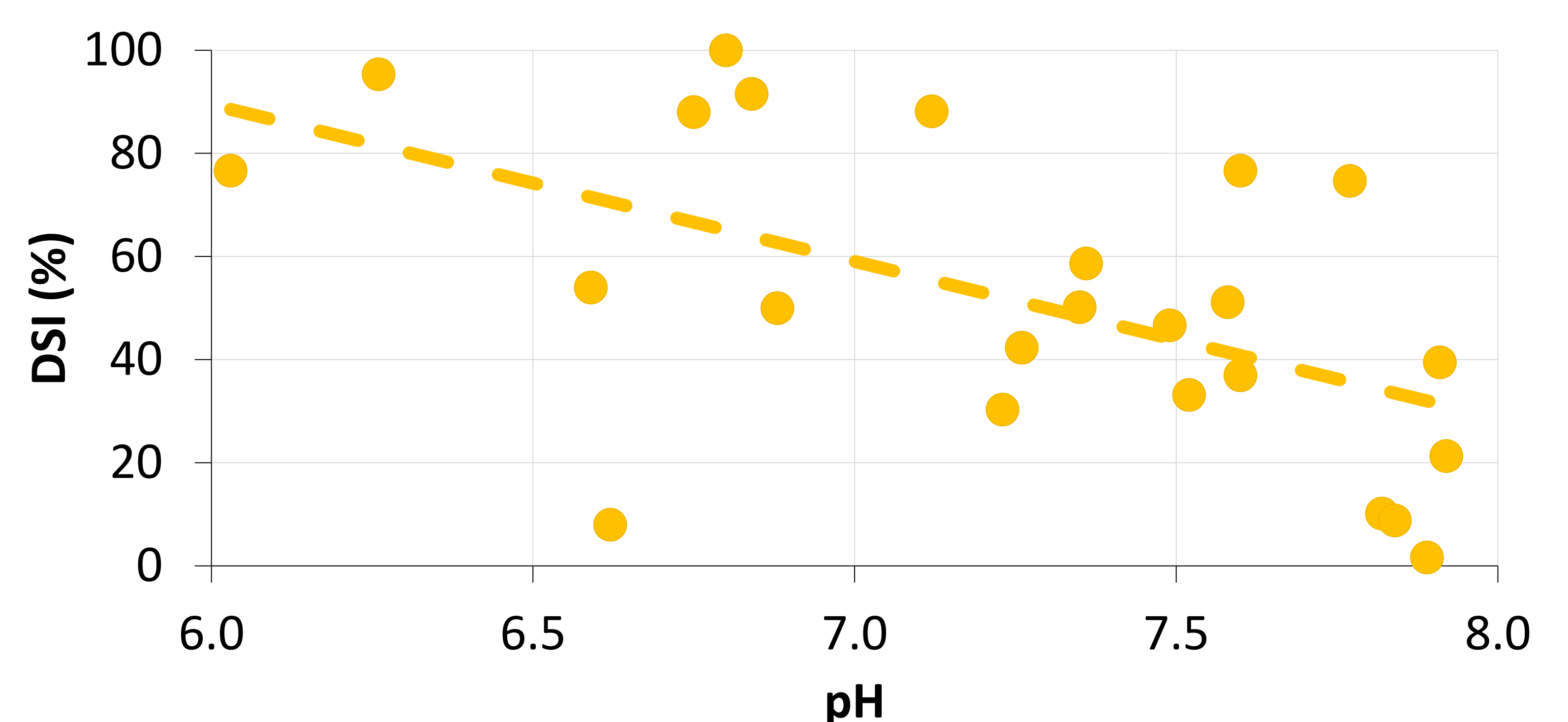


Figure 3: Disease severity index (DSI) in relation to pH in the interaction of boron and spring applied lime ($r^2=-0.57$)

CONCLUSIONS

- No interaction between lime and boron
- Using lime to raise the pH of soil is an effective management strategy to decrease clubroot severity
- Rate/application method of boron needs further study

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