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Flea Beetle Field Scouting Guide

INTRODUCTION

Flea beetles are the most significant insect pest affecting canola production on the Prairies. Every year, they cost growers millions of dollars in yield, and quality losses.

There's no question that flea beetle populations have been on the rise in recent years. It means that to effectively control them growers need to be more vigilant than ever before.

This guide was designed to help you do just that with information and photographs that will help you to correctly identify flea beetles, scout your fields for flea beetle damage with greater accuracy and make better decisions about flea beetle control options.

At Syngenta, we're committed to helping you grow the best canola crop. If you have any questions about this guide, please don't hesitate to contact our Customer Resource Centre at **1-800-665-9250.**

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KNOW YOUR ENEMY: FLEA BEETLE IDENTIFICATION

In Western Canada there are two primary species of flea beetles to scout for: the **crucifer flea beetle**, which is uniformly blue-black and shiny; and the **striped flea beetle**, which has two horizontal yellow stripes running the length of its otherwise black body.

The crucifer flea beetle is abundant across all canola-growing regions, while the striped flea beetle is more common in the northern edges of this region. They are both small, only 2.5mm long, and hop away when disturbed, making them hard to see and harder to count. It's one reason flea beetle control programs usually begin with preventative measures, such as seed treatments that include an insecticide.

FLEA BEETLE LIFE CYCLE

Overwintering adult beetles begin to emerge in the spring as soon as the daytime temperatures get a few degrees above freezing. They immediately begin to feed on cruciferous plants such as canola and mustard. Depending on temperature, it can take up to three weeks for all overwintering adults to "wake up" and start feeding – the warmer it is, the more active they are; so if you are experiencing a slow spring, expect a longer emergence period for flea beetles.

Adults lay eggs from mid-May to August and this next generation of flea beetles will emerge in the late summer, beginning in late July. They will feed on canola throughout the fall, then retreat to shelterbelts and leaf litter to overwinter and begin the cycle again.

FACTORS AFFECTING OUTBREAK

Fall. A warm, open fall gives flea beetles sufficient time to feed then safely take cover for the winter.

Winter. Good snow cover and milder winters protect flea beetles, reducing winterkill and ensuring healthy adult populations come spring.

Spring. Under cool spring conditions, flea beetles will usually walk or hop to nearby canola plants to feed. When temperatures exceed 20 C, flea beetles become much more active and can fly several miles in search of food.

ECONOMIC AND AGRONOMIC IMPACT

Flea beetles are the most abundant and most economically damaging pest in canola. Yield losses of 10% or more are not uncommon where flea beetles are present in relatively high numbers. Unchecked, flea beetle attack can:

- cause uneven crop emergence
- cause thin plant stands (increase weed competition)
- delay crop development
- cause uneven crop maturity
- increase green seed count
- create wounds on leaves where plant diseases can enter
- reduce yields

MANAGEMENT TOOLS

Growers have two main tools at their disposal to control flea beetles: seed treatments and foliar insecticides.

Seed treatment. You need to make your seed treatment decision in the winter, and base that decision on what you saw in your canola fields the previous fall. The late-season adult flea beetle population you saw at harvest is your best indication of what kind of flea beetle pressure you can expect the following spring.

While there are no hard and fast figures on what constitutes low, moderate and high flea beetle infestations, most entomologists say it's not hard to estimate. If fall densities seem low to moderate (i.e. if flea beetles are present but not thick on plants, and if feeding damage is moderate) then you should consider ordering your canola seed treated with Helix®. You can count on Helix to provide 14 to 21 days of protection, after emergence, against low to moderate flea beetle pressure.

However, if canola plants are thick with flea beetles during the fall and you see significant feeding damage, you are at risk of a heavy and sustained outbreak in the spring and should consider having your seed treated with Helix XTra with 28 to 35 day protection after emergence.

Foliar insecticide. While all of the new generation canola seed treatments contain an insecticide to protect young seedlings against flea beetle feeding damage, in all cases, the flea beetles must bite the plant to die. It means that no matter what product you choose, you should expect to see some feeding damage. You should always plan to scout young canola crops to ensure the flea beetles are being effectively controlled. This is particularly true if you experience heavy and sustained flea beetle pressure. In these cases, a seed treatment may not be enough, and you will need to spray a foliar insecticide, like Matador®.

The industry recommendation is to spray as soon as you observe 25% leaf damage during the early stages of plant growth (prior to the 4th leaf). Therefore scouting your fields for the first two to three weeks after emergence is critical. To scout, begin by sampling representative areas of your field (feeding is worse on the field edges so walk well into the field). Look for feeding damage on the cotyledons and first true leaves and only spray when you see an average of 25% leaf damage across your sampled plants. The photographs in this book will help you to accurately gauge feeding damage from zero to 100% damage.

0% Damage

10% Damage

20% Damage

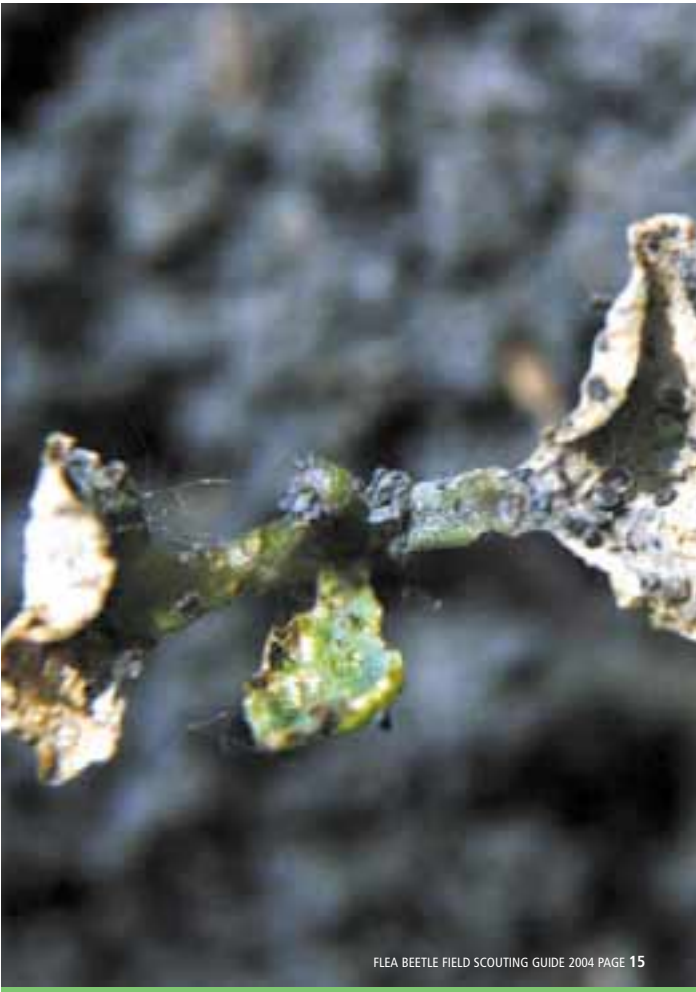
25% Damage

SPRAY THRESHOLD

35% Damage

50% Damage

75% Damage



100% Damage

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