Diamondback Moth Management: It's all in the Details

The diamondback moth proved difficult to control and had the potential to cause significant economic losses across the G-Mac's territory during the 2017 growing season. If canola or mustard are part of your rotation it will be important to keep the diamondback moth on your radar. You may also want to be aware of a few key details about them such as life cycle, where they come from, and proper identification.

Identification/Life Cycle

The diamondback moth has four main life stages per generation, egg, larvae, pupae (Figure 1), and adult. The larval stage is the most significant part of the life cycle to us as, it is the stage that causes damage to agricultural crops (Figure 2). As G-Mac's canola growers are all too aware after this season, diamondback moths can have multiple generations in a single year allowing all four of the life stages to present at a given moment. Therefore, it is important to be able to identify which stage is present and at what populations in order to identify an appropriate economic threshold and application timing. The ability of having multiple generations per year also means that one pesticide application may not be sufficient in controlling the diamondback moth for the entire growing season.

Figure 1. Diamondback moth pupae (Canola Council of Canada, 2017).

Figure 2. Diamondback moth larvae (Canola Council of Canada, 2017).

Where do They Come From?

The diamondback moth populations that infest Canadian canola and mustard crops blow in from the southern United States on strong spring winds. Very few, if any, pupae over-winter in Canada meaning the previous year's population does not affect the upcoming growing season's diamondback pressure. The Canola Council of Canada and provincial agricultural websites now have a wind trajectory model available to monitor wind patterns in the United States which helps to early predict diamondback pressure. These resources combined with early scouting can help to stay ahead of any possible diamondback moth infestations.

Control Techniques

One way to help reduce diamondback moth populations is to ensure brassicaceae weeds such as wild mustard or volunteer canola are controlled. This will reduce host plant populations and may slow their spread in years with lower pressure. Once diamondback moth populations reach economic thresholds an insecticide application may be required. Economic thresholds vary from year-to-year depending on variables such as crop price, growing conditions and crop stage. During the 2017 growing season 2-3 larvae per plant was generally used as the threshold although in most situations populations were significantly higher than that. One possible control option may be Coragen. This insecticide is relatively harmless to beneficial insects and can also provide residual activity for up to 14 days, depending on weather conditions and application rates. Effective results were observed using Coragen this past crop year using ground and air application techniques.

The diamondback moth may be a difficult insect to take care of in years with high pressure as we observed in 2017. With proactive scouting and monitoring we can stay ahead of these insects and reduce the amount of damage they can inflict on our crops. If you ever have any questions about the diamondback moth feel free to give G-Mac's AgTeam a shout!

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