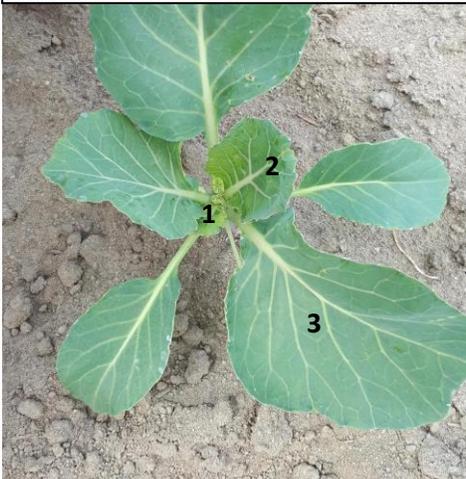


COLE CROP IPM NEWSLETTER: Late May Update (Instagram Updates from the Field: @ufvvegipm)

Scouting Tips

Figure 1. Monitor the centre (1), younger inner leaves (2) and older outer leaves (3).



How to check an individual plant: As cole crops begin to mature, individual plants should be checked in three specific areas - the crown or centre of the plant, upper and lower surfaces of younger leaves, upper and lower surfaces of older leaves. The crown (Fig. 1) is especially important to check, as pests like cabbage aphids and caterpillars can be found there. You will need to bend to get close enough to the crown to see, and you will need to push leaves apart to look all the way in. Although time-consuming and possibly destructive to the individual crop – monitoring the whole plant allows growers to catch pest

problems when populations are small.

How many plants to check? A minimum, if you don't have a scouting plan already, is the 5X5 method used in Ontario – 5 random spots in the field (including at least 1 or 2 spots along field edges) - check 5 plants per spot, for a total of 25 plants. For the scouting used to collect information in this newsletter, we check 8 spots X 5 plants in a randomly selected row for a small planting (less than 15 beds). For larger plantings, 2 randomly selected rows are done.

Pests found in the last 2 weeks

Caterpillars: Caterpillars (Fig. 2) (and their egg stages) have been found on all of the various cole crops in both Abbotsford (Sumas Prairie) and Delta. The Ontario threshold for caterpillar control in head and stem crops, prior to head fill is 20 to 30% infestation. So if 5 to 7 of the 25 plants

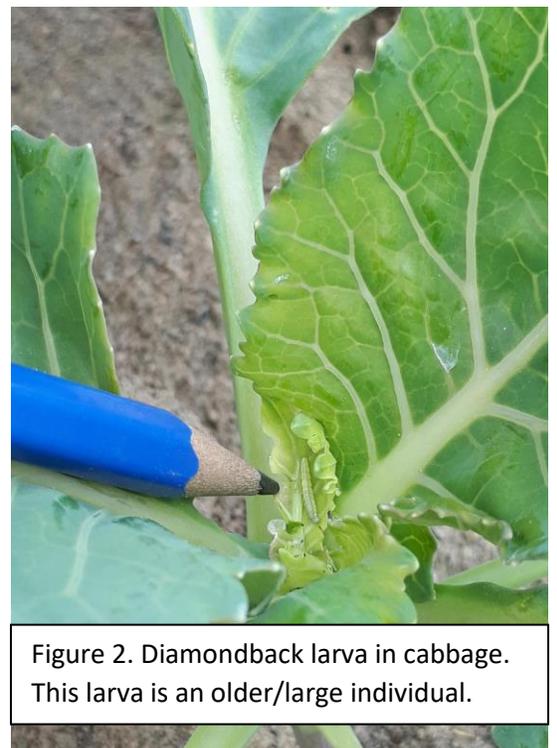


Figure 2. Diamondback larva in cabbage. This larva is an older/large individual.

monitored have caterpillars or eggs, it is time to spray. It is important to scout fields for caterpillars and not just spray on a calendar schedule. There are two main reasons for this and both have to do with optimizing (organic or conventional) insecticide use so that growers save money AND get good control.

First - size and stage matters. The labels of some of the insecticides registered for caterpillar control provide a rate range. For example, instructions from the Delegate label for Brassica Head and Stem Vegetables is as follows:

For the control of diamondback moth, cabbage looper and imported cabbageworm, apply 140-200 grams of product per hectare. Apply when pests appear, targeting eggs at hatch or small larvae. Heavy infestations may require repeat applications. Use the higher rate for high infestations or advanced growth stages of the target pests. Maximum of three applications per year with a minimum re-treatment interval of 5 days and a preharvest interval of 1 day.

So as per the label instructions, monitoring to determine which stages (eggs, young/small larvae or larger/older larvae) are present can help with determining which rate to use. Always using the highest rate can result in a waste of product and money. In the case of Delegate, light infestations of young larvae will be effectively controlled, provided coverage is sufficient, with the lower label rate.

Second – species composition matters. For example, here are the rate ranges (g/ha) on the Dipel 2X label for cabbage and broccoli

BROCCOLI	Cabbage looper	275-550
	Diamondback moth	55-140
	Imported cabbageworm	55-140
CABBAGE	Cabbage looper	275-550
	Imported cabbageworm	55-275
	Diamondback moth	275

As per the Dipel 2X label instructions, a much higher rate may be needed if the majority of the population consists of cabbage loopers versus diamondback or imported cabbage worms. Assuming that you have cabbage loopers and thus going for the highest rate would be a waste of money and product. Historically individual fields can vary in the caterpillar

species composition (Table 1), so the decisions that work for one field/farm may not be optimal for another.

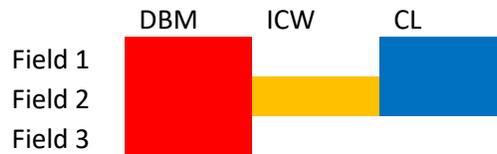


Table 1. Composition of caterpillar species in three Abbotsford cabbage fields monitored on the same day (June 2). DBM = diamondback, ICW = imported cabbage worm, CL = cabbage looper. (Data: R. Prasad, 2017 unpublished)

Pictures of the different life stages of these three species will be posted to our Instagram account (@ufvvegipm), as we find them in the field. The following link is a good site for distinguishing diamondback larvae and imported cabbage worms: <https://www.canolawatch.org/2011/08/10/which-worm-is-it-bertha-diamondback-or-cabbage/>

Pictures of cabbage loopers can be found on this site: <http://www.omafra.gov.on.ca/IPM/english/brassicas/insects/cabbage-looper.html#advanced>

What to watch for in the coming weeks

Cabbage aphids: A few small infestations of cabbage aphids were observed this week in Abbotsford. Cabbage aphids will be the focus of the next newsletter. More information can be found:

<http://ipm.ucanr.edu/PMG/r108300811.html>

Aphid natural enemies: In addition to cabbage aphids, natural enemies of aphids will be increasingly active. Knowing what levels of natural enemies you have in fields can also help to make wise pesticide choices. Some products are less harmful to natural enemies (e.g. *Bacillus* spp. based products). Aphid natural enemies will also be focused on in the next newsletter.

Wilted plants: As the earliest plantings begin to grow, check wilted plants. Two causes of wilting at this stage will be root maggots or clubroot. In conventionally managed crops root maggot injury at row ends is common, however if you are seeing damage more than 10-m into the row contact Susan Smith (see below). We will be discussing clubroot in the next newsletter. In the meantime growers can educate themselves on clubroot symptoms by reading more: <https://www.canolacouncil.org/canola-encyclopedia/diseases/clubroot/about-clubroot/>. If you suspect clubroot in a field contact Susan Smith at 604-556-3087 or Susan.L.Smith@gov.bc.ca

The Cole Crop Newsletter is prepared by Renee Prasad (UFV Agriculture) in consultation with Dru Yates (ES Cropconsult Ltd.), and Susan Smith (BC Agri). The purpose of this newsletter is to educate producers on the current status of cole crop pests in the Fraser Valley. Pest status in individual fields will vary. Funding is from Brassica Levy Research Fund, Processing Vegetable Industry Development Fund and the Fraser Valle Cole Crop Growers Association. References to products are for educational purposes and do not imply endorsement or recommendations for use. Growers should always read and follow label directions. Full labels for products registered in Canada can be accessed via Health Canada: <https://www.canada.ca/en/health-canada/services/consumer-product-safety/pesticides-pest-management/registrants-applicants/tools/pesticide-label-search.html>