COLE CROP IPM NEWSLETTER: Early July Update (Instragram Updates from the Field: @ufvvegipm)

Scouting Tips – Scouting Tools

Growers that are new to scouting their own crops may struggle to feel confident that they aren't "missing" pests. If you are scouting on an informal basis, then having the elements of a scouting kit in your vehicle at all times ensures that you make the most of the opportunity to scout fields when it occurs. If you (or a member of your team) is designated to scout at a specific time of the week, then the scouting kit is part of that routine. A good scouting kit would include the following.

Figure 1. UFV scout with data sheet! On her data sheet, Lindsey includes a map of where she has taken samples in the field.

Data Sheets: Collecting information in a consistent way allows growers to make decisions for the coming weeks and also to review pest trends and plan ahead for the next growing season. For example, it is not always easy to remember which field had clubroot, but if it is down on a data sheet then there is a record. As a minimum, data sheets should include information on the field where information is being collected (e.g. variety, age of planting), date (including year) and where in the field samples and pests were observed (Fig. 1). The University of Massachusetts (UMass) has a data sheet that can be used for cole crop monitoring. Just keep in mind that some of the recommendations for timing of monitoring on the UMass data sheet don't apply to Fraser Valley. For example, monitoring for pests like root maggot should be season long (especially for root cole crops), in the Fraser Valley. Find the UMass data sheet here: https://ag.umass.edu/sites/ag.umass.edu/files/pdf-doc-ppt/brassica.pdf

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Tools needed are minimal for cole crop monitoring and are summarized in Table 1. Most tools are readily available (e.g. clipboards or sealable plastic bags) and others (e.g. hand lenses shown in Fig. 2) can be found on-line. Another great place to pick up monitoring tools is the Pacific Agriculture Show. Vendors of biocontrol products often have hand lenses and other monitoring supplies as part of their "swag".

Figure 2. UFV scout with hand lens! Hand lenses are useful tools for all crops. Gabriel has his strung with flagging tape so he has it all the time.

Table 1. Above ground cole crop pests and how to find them when scouting

Cole Crop Pest (Above ground)	Where to look	Tool to use
Aphids	Underside of leaves and in the crown	When colonies are small (<100 individuals) need a **hand lens**
Caterpillars (larva stage)	Top and bottom of leaves – look for feeding damage, actual larva, or pupa (diamond back and imported cabbage worm only)	Can be seen easily with naked eye except when first hatched. Then a **hand lens** is useful
Caterpillars (adult stage)	Adult stages of all the caterpillar pests can be seen flying in fields when you are monitoring	**Pheromone** or **light traps** could be used; however, these are not really necessary if a regular monitoring program in the foliage is in place. The decision to control, for these pests, would not be based on trap data
Caterpillars (egg stage) – looper and imported cabbage worm only	Underside of leaves	**Hand lens**, until person scouting is familiar with appearance
Disease Symptoms	Anywhere in foliage	Collect leaves of unfamiliar symptoms into **plastic bags** to keep leaves fresh until ID can be made or submit to BC Agri Plant Health Lab (see Bulletin 4)

Pest Monitoring Activities in the last 2 weeks

In the past two weeks pheromone traps for Swede Midge have been put up by BC Ministry of Agriculture staff and UFV students. Swede midge is not

known to occur in BC, however it is well established in other cole crop growing areas in particular Ontario and eastern US. To date it has not been found in Alberta or in any US states West of the Rockies. This years survey is part of an on-going detection program, run each year by the ministry. BC Ministry of Agriculture has prepared a fact sheet with all the relevant details on this pest. Find the fact sheet here: https://www2.gov.bc.ca/assets/gov/farming-natural-resources-and-industry/agriculture-and-seafood/animal-and-crops/plant-health/swede_midge.pdf

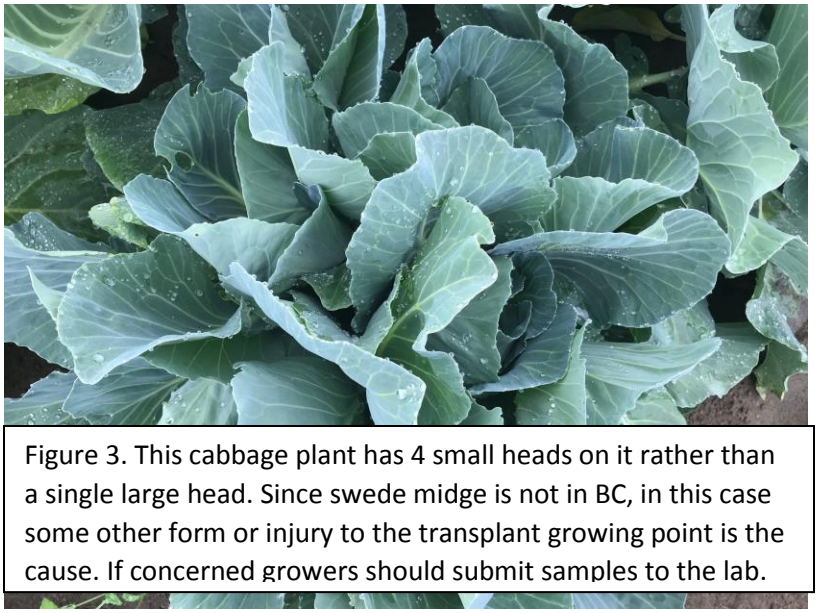

Figure 3. This cabbage plant has 4 small heads on it rather than a single large head. Since swede midge is not in BC, in this case some other form or injury to the transplant growing point is the cause. If concerned growers should submit samples to the lab.

Growers should familiarize themselves with the symptoms of swede midge injury (as shown on the fact sheet). As swede midge larva feed on new tissue, pay particular attention to growing points on transplants. Symptoms will including swelling, distortion, and twisting of leaves and stems. Established plants in the field may not form heads or form multiple heads (Fig. 3) or have scarring. If you have suspect plants, either in the field or in the propagation house, please submit them to the BC Agri Plant Health Lab (see Bulletin 4 for details) or contact Susan Smith: Susan.L.Smith@gov.bc.ca or Tracy Hueppelsheuser: Tracy.Hueppelsheuser@gov.bc.ca. Growers who are interested in perhaps participating in the survey should contact either Susan or Tracy.

Pests found in the past 2 weeks (and to continue to look for)

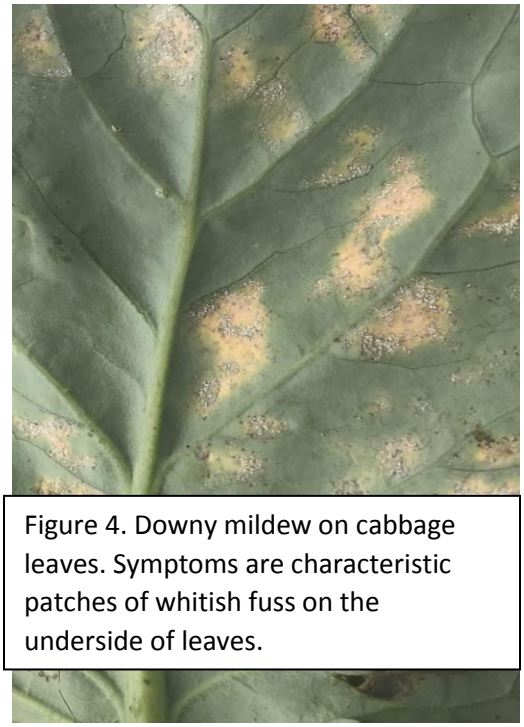

Figure 4. Downy mildew on cabbage leaves. Symptoms are characteristic patches of whitish fuss on the underside of leaves.

Downy Mildew – Symptoms of downy mildew have been found this past week on mature cole crops in Abbotsford (Fig. 4). In Delta, downy mildew has been active since earlier in the season on transplanted crops. Downy mildew symptoms include characteristic patches of whitish "fuzz" on the underside of leaves. Downy mildew is a disease that is favoured by the moderate and wet/humid weather we've seen in the past month. On crops that are nearing harvest, growers should check for symptoms and plan to cultivate in crop residue, ensuring the residue is well covered by soil. Cultivating residue ensures that the disease pressure is reduced, thus protecting younger plants. Younger plants can be further protected with application of fungicides. Conventional and organic options are available. Learn more about fungicide choices for downy mildew in the BC Vegetable Production Guide here: https://www2.gov.bc.ca/gov/content/industry/agriservice-bc/production-guides/vegetables/cole-crops. As always coverage of fungicides (or any pesticide) is critical for efficacy. Also check transplants prior to planting out in the field. Greenhouse conditions often favour disease development. Transplants can also be treated to reduce disease development

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