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In the vegetable garden in June

Author(s): проф. д-р Стойка Машева, ИЗК "Марица" Пловдив; проф. д-р Винелина Янкова, ИЗК “Марица” в Пловдив

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Seedling Production

In open seedbeds, seedlings for late tomatoes, head cabbage, cauliflower, broccoli and leek are grown. In the presence of frequent showers and temperature depressions during the month, there is a risk of attacks by bacterial leaf spots, early blight (Alternaria) and late blight in tomato seedlings, downy mildew in brassicas, and rust in leek. The main pests in tomatoes are aphids and caterpillars. In brassicas, thrips, caterpillars, flea beetles and stink bugs cause damage.

The plant protection products (PPPs) used for treatment are listed under field production.

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Greenhouse Production

By the end of the month, harvesting of tomatoes and early cucumbers is completed. Cultivation of late cucumbers and peppers continues. In cucumbers, attacks by **downy mildew (Cuban) and powdery mildew** can be expected. For control of **downy mildew**, treatments are carried out with Enervin SC 120 g/ha; Zoxis 250 SC 70–80 ml/ha; Equation Pro 40 g/ha; Infinito SC 120–160 ml/ha; Keefol WP 250 g/ha; Corsate 60 WG 20–30 g/ha; Prev-Gold 160–600 ml/ha; Taegro 18.5–37.0 g/ha, and for control of **powdery mildew** the following are registered: Vivando 20 ml/ha (0.02%); Dagonis 60 ml/ha; Domark 10 EC 50 ml/ha; Zoxis 250 EC 70 ml/ha; Collis SC 40–50 ml/ha; Legado 80 ml/ha; Ortiva Top SC 100 ml/ha; Sivár 80 ml/ha; Sonata SC 500–1000 ml/ha; Trunfo 80 ml/ha; Fytosev 200 ml/ha; Fontelis SC 240 ml/ha. In peppers, powdery mildew is a problem during this period. For its control, the following are registered: Vivando 30 ml/ha; Dagonis 60 ml/ha; Zoxis 250 EC 70 ml/ha; Ortiva Top SC 100 ml/ha; Prev-Gold 160–600 ml/ha; Systhane 20 EW 30–37.5 ml/ha; Systhane Ecozome EW 65–165 ml/ha; Sonata SC 500–1000 ml/ha; Taegro 18.5–37.0 g/ha; Tazer 250 SC 80–100 ml/ha; Thiovit Jet 80 WG 300 g/ha; Topaz 100 EC 35–50 ml/ha; Fytosev 200 ml/ha. In tomatoes, early blight (Alternaria), late blight and, less frequently, grey mould (Botrytis) are still observed. The pests are the same as in the seedlings – greenhouse whitefly, aphids, western flower thrips, caterpillars, mites and tomato leaf miner. Due to intensive harvesting, when treatment is necessary, PPPs with a short pre-harvest interval are used.

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Field Production

Frequent light rains and high humidity favour the occurrence of late blight in tomatoes and potatoes, downy mildew in onion and brassica crops, Phytophthora fruit rot in tomatoes; under intense rainfall – brown leaf spots (Alternaria); when rainfalls are accompanied by strong winds – bacterial leaf spots and scorch in tomatoes and peppers.

late blight

The development of **late blight** in tomatoes and potatoes continues throughout the year. Conditions are especially favourable for its harmful activity in structures with plastic covering, where abundant dew is formed. Depending on conditions, the incubation period is 3–10 days. The fungus develops under a specific combination of meteorological conditions – “critical periods”, which are:

- Light continuous rainfall lasting two or more days;

- Relative air humidity during the period above 75%;

- Cloud cover over 8 octas;

- Mean daily temperature – around 16 °C (min 10–12 °C; max 18–25 °C);

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- Retention of water droplets for more than 4 hours on the plant surface is also a precondition for new infections.

In the presence of critical periods, crops are treated with registered PPPs: Azaka 80 ml/ha; Acticluster 300–400 ml/ha; Brionflo 100 SC 80 ml/ha; Keefol WP 250 g/ha; Daramun 80 ml/ha; Enervin SC 120 g/ha; Zoxis 250 SC 70–80 ml/ha; Equation Pro 0.04%; Captan 80 WG 150–190 g/ha; Copforce Extra 200 g/ha; Corsate 60 WG 20–30 g/ha; Orvego 70 ml/ha; Polyram DF 0.2%; Revus 250 SC 50 ml/ha; Simbal Flow 50 ml/ha; Sphinx Extra 180 g/ha; Taegro 18.5–37.0 g/ha; Tazer 250 SC 80–100 ml/ha.

In **potatoes**, the PPPs registered against late blight are: Banjo Forte 100 ml/ha; Bionflo 100 SC 80 ml/ha; Daramun 80 ml/ha; Dimix 500 SC 30–36 ml/ha; Diflunova 100 ml/ha; Enervin SC 120 g/ha; Equation Pro 40 g/ha; Infinito SC 120–160 ml/ha; Copforce Extra 200 g/ha; Corsate 60 WG 15–20 g/ha; Polyram DF 180–200 g/ha; Ranman Twin Pack 20 ml/ha + 15 ml/ha adjuvant; Revus 250 SC 50 ml/ha; Rival Duo 250 ml/ha; Simbal Flow 50 ml/ha; Simbal 45 WG 25 g/ha.

onion downy mildew

For the control of **onion downy mildew**, the following are registered: Zoxis 250 SC 80–100 ml/ha; Orvego 70 ml/ha and Tazer 250 SC 80–100 ml/ha, and for **cabbage** only Infinito SC 160 ml/ha is registered, but other PPPs registered against downy mildews can also be applied.

For the control of **early blight in tomatoes**, spraying is carried out with: Azaka 80 ml/ha; Dagonis 100 ml/ha; Zoxis 250 SC 70–80 ml/ha; Captan 80 WG 150–190 g/ha; Copforce Extra 200 g/ha; Ortiva Top SC 100 ml/ha; Polyram DF 0.2%; Prev-Gold 200–600 ml/ha; Sinstar 70–80 ml/ha; Taegro 18.5–37.0 g/ha; Tazer 250 SC 80–

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100 ml/ha. Of these, only Polyram DF is registered against **early blight** in potatoes, but the products registered in tomatoes can also be used.

For the control of **Alternaria in cabbage seedlings**, the following can be applied: Azaka 100 ml/ha; Dagonis 100 ml/ha; Zoxis 250 SC 80–100 ml/ha; Ortiva Top SC 100 ml/ha and Tazer 250 SC 100 ml/ha.

For the control of **bacterial diseases in tomatoes and peppers**, treatments are carried out with: Cuproxat FL 0.3%; Taegro 18.5–37.0 g/ha; Funguran OH 50 WP 0.3%.

In cabbage seedlings and early cabbage, monitoring is carried out for attacks by the **large white butterfly**, the **diamondback moth** and **flea beetles**. When the **large white butterfly** appears, treatments are carried out with: Avant 150 EC 17 ml/ha; Altacor 35 WG 8–10 g/ha; Vaztak Nov 100 EC 10 ml/ha; Exalt 200 ml/ha; Mageos 7 g/ha; Meteor 60–70 ml/ha; Citrin Max/Cyperkill 500 EC/Cypert 500 EC/Poly 500 EC 5 ml/ha. For the control of the **diamondback moth**, the following are registered: Avant 150 EC 17 ml/ha; Altacor 35 WG 8–10 g/ha; Vaztak Nov 100 EC 10 ml/ha; Exalt 200 ml/ha, and against **flea beetles** – Vaztak Nov 100 EC 7.5 ml/ha; Mageos 5 g/ha.

Hyalesthes obsoletus

Usually, during the first ten days of June, the **leafhopper *Hyalesthes obsoletus*** appears, which transmits stolbur in peppers, tomatoes, eggplants, celery and others. For its control, several sprays are carried out at 10–12-day intervals with: Vaztak Nov 100 EC 10 ml/ha; Mageos 7 g/ha; Mospilan 20 SP 25 g/ha. For the control of the vector of tomato, pepper, eggplant etc. bronze disease – the **tobacco thrips**, the following are applied:

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Azatin EC 100–150 ml/ha; Dicarzol 10 SP 556 g/ha; Exalt 200–240 ml/ha; Limocid 400–800 ml/ha; Neemik Ten 390 ml/ha; Oikos 100–150 ml/ha; Requiem Prime 500–1000 ml/ha; Sineis 480 SC 10–37.5 ml/ha; Naturalis 100–150 ml/ha.

Colorado potato beetle

For the control of the **Colorado potato beetle** in potatoes, eggplants and tomatoes, the following PPPs are registered: Azatin EC 100–150 ml/ha; Altacor 35 WG 8–12 g/ha; Ampligo 150 ZC 0.03 l/ha; Aficar 100 EC 20 ml/ha; Vaztak Nov 100 EC 10 ml/ha; Efzimetrin 10 EC 20 ml/ha; Imidan 50 WG 100 g/ha; Coragen 20 SC/Voliam 5–6 ml/ha; Mageos 8 g/ha; Masan 25 ml/ha; Meteor 60–70 g/ha; Neemik Ten 390 ml/ha; Oikos 100–150 ml/ha; Sineis 480 SC 5 ml/ha; Cyclon 10 EC 20 ml/ha; Cyperfor 100 EC 20 ml/ha; Citrin Max/Cyperkill 500 EC/Cypert 500 EC/Poly 500 EC 5 ml/ha; Sherpa 100 EC 20 ml/ha; Sherpa 100 EW 20 ml/ha. For the control of the **potato tuber moth** in potatoes, the product Ampligo 150 ZC 0.03 l/ha can be used. Often, treatments targeting the Colorado potato beetle are also effective against the potato tuber moth.

During this month, the first hailstorms also occur. The damage is assessed after 2–3 days. In small areas, severely damaged plant parts are removed. After 4–5 days, the affected crops are sprayed with Funguran OH 50 WP 0.15%, with mandatory addition of an adjuvant. Top dressing is carried out with 10–20 kg/ha ammonium nitrate. As appropriate, pesticide solutions are combined with foliar fertilizers.

When treating onion and brassica crops, an adjuvant is added to the pesticide solutions.

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All requirements for application (registered PPPs, quality spraying, dosages, pre-harvest intervals), transport and storage of chemical plant protection products must be observed. Hygiene and safety regulations for working with toxic substances must be followed. A treatment log must be kept in accordance with the requirements of the BFSA.