

In the vegetable garden in autumn

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Agrotechnical and Technological Practices

The period is transitional – summer is leaving, autumn is approaching. This affects both the course of agrometeorological factors (warm during the day, cool or even cold at night) and gardening practices. The produce is harvested intensively in order to avoid frost damage. After harvesting, the fruits are inspected for injuries, disease spots, damage and presence of pests.

Sorting follows and the produce is directed according to its intended use. For tomatoes, a common practice is to pick all fruits, leaving on the plants only the smaller, underdeveloped, dark green ones, which can ripen in good weather. Green or slightly turning, well-shaped, healthy and uninjured tomatoes are arranged in 1–2 layers in crates, which are placed in a cool room at low positive temperatures. The ripened fruits are regularly sorted out and used for consumption or for

sale on the market. The storage period for tomatoes is about one month. Pink or red, but not overripe, healthy, crack-free and well-shaped tomatoes are best arranged in a single layer in crates. They should be kept, if possible, at lower temperatures (1–2°C) so that they can be stored for a longer period – 15–20 days.

After harvesting the produce, the areas are cleared of plant residues (if possible), basic fertilization, levelling, ploughing, etc. are carried out to prepare the plots for the next vegetation period. Outdoors, spinach is sown every 10–15 days, onions and garlic for green bunching, winter cabbage, lettuce and head lettuce are planted. In steel-glass greenhouses, “pre-crops” of tomatoes and cucumbers are grown, and those intended for year-round production are also planted. In polyethylene structures, the produce is harvested and their vegetation ends towards the end of October and the beginning of November.

The period is most suitable for disinfection of the structure and the soil in the vacated cultivation facilities. At the end of the vegetation period, before uprooting, the plants are fumigated with sulphur (50 g/m³, exposure 30–40 hours) or with 40% formalin (4% solution at 1 l/m²). For better evaporation it may be mixed with potassium permanganate.

Plant Protection Practices

1. Newly transplanted crops in protected cultivation facilities are attacked by **root rot**, tomatoes – by **grey mould (Botrytis)**, **leaf mould**, **late blight**, and cucumbers – by **downy mildew** and **powdery mildew**. Among the pests, the most common are **greenhouse whitefly**, **aphids**, **leaf-miner flies**, **caterpillars**, **mites (tomato russet mite**, less frequently **spider mites**). Control of the listed harmful organisms is carried out with the following means:

2. Under field conditions, late blight on tomatoes, downy mildew on brassicas, powdery mildew on parsley, celery, okra, as well as infestations by aphids, various caterpillars, and the southern green stink bug (*Nezara viridula*) are most often observed. Since the produce is being harvested intensively, pesticides are applied only when absolutely necessary, and only those with a short pre-harvest interval. Control of the listed harmful organisms is carried out as follows:

3. Disinfection of greenhouse areas with soil fumigants: The soil is first ploughed, if possible to a greater depth. It is moistened to 70% of field capacity. Individual fumigants are applied mechanically in accordance with technological requirements, after which the area is tightly covered with impermeable film. After the required exposure time has elapsed, the facilities are ventilated and the soil is degassed by repeated ploughing. For fumigation to be successful, it must be applied at an optimal temperature: not lower than 10°C and not higher than 30°C, optimal 18–20°C.