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Diptera in grain crops in Belarus

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In grain crop agrocenoses of Belarus there is a big variety of insects-phytophages from dipterous order (Diptera). The specialized pests from this order make 21.5% from all the phytophages. By species, number and harmfulness dominate five representatives of frit fly family (Chloropidae) – *Oscinella pusilla*, *Oscinella frit*, *Meromyza nigriventris*, *Meromyza variegata* and *Chlorops pumilionis*. Two species – barley midge (*Mayetiola destructor*) and *Opomyza florum* are only the background species but other phytophagous flies – *Delia coarctata*, *Delia platura*, *Hydrellia griseola* and *Tipula paludosa* in grain crops are met individually. Predatory flies from Syrphidae family are presented by for species: *Episyrphus balteatus*, *Eupeodes corollae*, *Sphaerophoria scripta* and *Syrphus ribesii*.

Under conditions of Belarus frit flies are of economic importance. Winter grain crop stem severity has made from 25–41%, oats 15–20%, grain – from 0.3–20.1%, barley – 10–18%, and 0.6–16.4%, accordingly, triticale – 22.7–49.0%.

In this connection chloropid fly biological features and harmfulness are studied in the share of grain crops. In spring barley and oats frit flies have two generations, in spring wheat and triticale crops the second generation does not develop.

In separate years from dipterous pests a considerable damage can be brought by black wheat leafminer (*Agromyza albipennis*), especially to spring barley and wheat crops, in insignificant degree – oats and triticale. At mass insect development barley losses have made from 2–8.5 cwt ha⁻¹.

The regulating role of agro-technical measures complex (sowing periods, fertilizers, varieties) on dipterous insects harmfulness decrease is studied. The estimation of insecticides efficiency at seed treatment and application during vegetation to control chloropid flies number and harmfulness is done. To substantiate carrying out the protective measures we have developed the ecological and economic expediency thresholds of insecticides application. These indicators change depending on a crop, its cultivar features and planned productivity. So, for example, in spring grain crops the first generation frit flies bring the greatest damage to oats, triticale, then barley and wheat, in winter grain crops – triticale, barley, to a lesser degree – to wheat and rye. Frit flies for every crop differs accordingly: At 1–2 oat and triticale leaves stage makes 10–15 flies, spring wheat – 15–20, barley – 20–25, winter triticale, wheat and rye – 25–30 per 100 net sweeps.

Key words: cereals (barley, oats, rye, triticale, wheat), important pests, biology, leafminers

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