

What We Learned From the Failure of the Ragweed Leaf Beetle in Russia

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The ragweed leaf beetle, *Zygogramma suturalis* F. was introduced in Russia by O.V.Kovalev in 1978, in an effort to control the common ragweed, *Ambrosia artemisiifolia* L. Within a few years of its introduction, the beetle successfully acclimated and in 1982-1985 it was able to suppress ragweed in release site and several neighboring fields. This gave rise to several optimistic publications (e.g. Kovalev *et al.* 1983; Kovalev, 1989; Harris, 1991). However, further investigations in Russia have showed that the ragweed leaf beetle was not sufficiently effective to control the weed in crop rotation cenoses. Fields with high beetle density were very few and far between (Reznik *et al.* 1994). At present, *Z. suturalis* is widespread over the area infested by common ragweed in Russia, but the mean density of the beetle is very low. Significant damage to ragweed mostly occurs on small patches usually located at field margins.

Z. suturalis was introduced against *A. artemisiifolia* also in Yugoslavia, China and Australia. The first publications were rather optimistic, same as that in Russia (Igrc, 1987; Wan and Wang, 1990a, 1990b; Julien, 1992; Igrc *et al.* 1995). Unfortunately, as far as I know, since 1995, nothing were published on the current results of *Z. suturalis* introduction in these countries. This lack of data suggests failures, but gives no way of making final general conclusions from these very interesting pioneering projects.

Nonetheless, three lessons can be learnt: two are scientific, and the last one is rather organizational.

1. Results of fine-scale studies on insect-plant interrelations should be used for broad scale predictions with extreme caution. In all above-mentioned projects, cage experiments and even short-term pilot releases of the phytophage conducted in experimental fields or plots gave rather promising results. However, studies conducted in Russia at the broad spatio-temporal scale suggest that *Z. suturalis* does not significantly influence ragweed density in crop rotation.

2. Our data reported in detail in the previous symposium (Reznik, 1996) suggest that search and dispersal ability (rather than voracity or fecundity) limits the biocontrol efficiency of *Z. suturalis*. Note that search and dispersal ability was still never included in scoring systems for prediction of the effectiveness of agents for the biological control of weeds (Harris, 1973, 1991). Supposedly, these features should be taken into account in selection of weed biocontrol agents for use in unstable, disturbed habitats.

3. Disinclination to publish the results of failed projects is easily understood. In some cases, termination of funding of an unsuccessful project hampers the publication of the final results. However, to prevent replication of errors, all researchers have to make a major efforts to publish the analyses of failed projects. Possibly, a kind of newsletter or Internet page devoted to the current state of weed biocontrol projects should be created for the publication of current information on all projects, both successful and failed. IBG

(International Bioherbicide Group) News may be cited as an example. At present, the "World Catalogue of Agents and their Target Weeds" (edited by M.H.Julien) partly plays this role, but the time intervals between its issues are too large for the fast exchange of information.

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