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Capsella bursa+pastoris (L.) Med. – another weed resistant to Simazine?

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Abstract

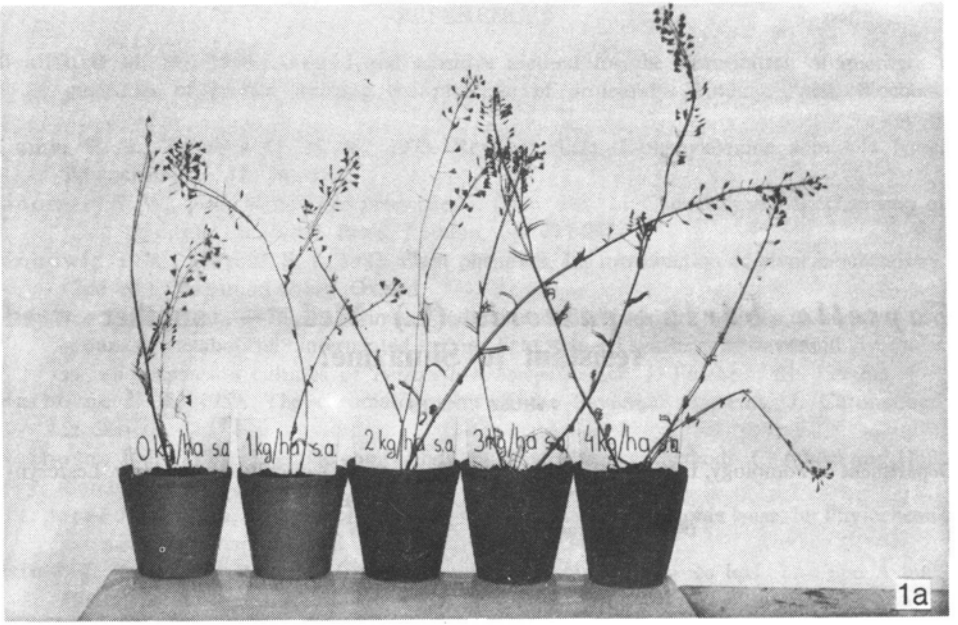
Biotypes of *Capsella bursa-pastoris* resistant to Simazine were found in orchards in the Lublin region in the years 1984-1986. This resistance was confirmed in pot experiments in 1986. *Capsella bursa-pastoris* L. has not been listed up to now among species in which such a resistance was found.

Key words: *Capsella bursa-pastoris*, *resistant biotypes*, *Simazine*

Gressel et al. (1982) and LeBaron (1985) have published lists of weed species in which biotypes resistant to triazine herbicides occurred. None of these papers contains *Capsella bursa-pastoris* although Gressel et al. (1982) informed that resistant biotypes were found inside this species in Great Britain by Holliday and Putwain. This information was not confirmed, however, by these authors themselves and Putwain (1982) indicated only the possibility of the occurrence of triazine resistance inside *Capsella bursa-pastoris*.

During the large scale studies carried out in several orchards in the Lublin region in the years 1984-1986, numerous plants of *Capsella bursa-pastoris* were found growing in the rows of trees where the soil had been treated with Simazine or Atrazine for at last 10 years. This weed was frequent mainly in one of the apple orchards, situated on loess soil. The frequency of *Capsella bursa-pastoris* was about 53-54% (200 plots the size of 0.5×0.5 m each were examined each year) and the percentage of the plot area covered by this weed ranged between 37.7 and 48.1% with a tendency towards an increase in density.

Several seedlings of *Capsella bursa-pastoris* L. were then transplanted from this orchard into pots in the spring of 1986 and later treated with Simazine at doses of 1, 2, 3, 4, 5, 6, 7, 8 and 10 kg ha^{-1} a.i. None of the treated plants



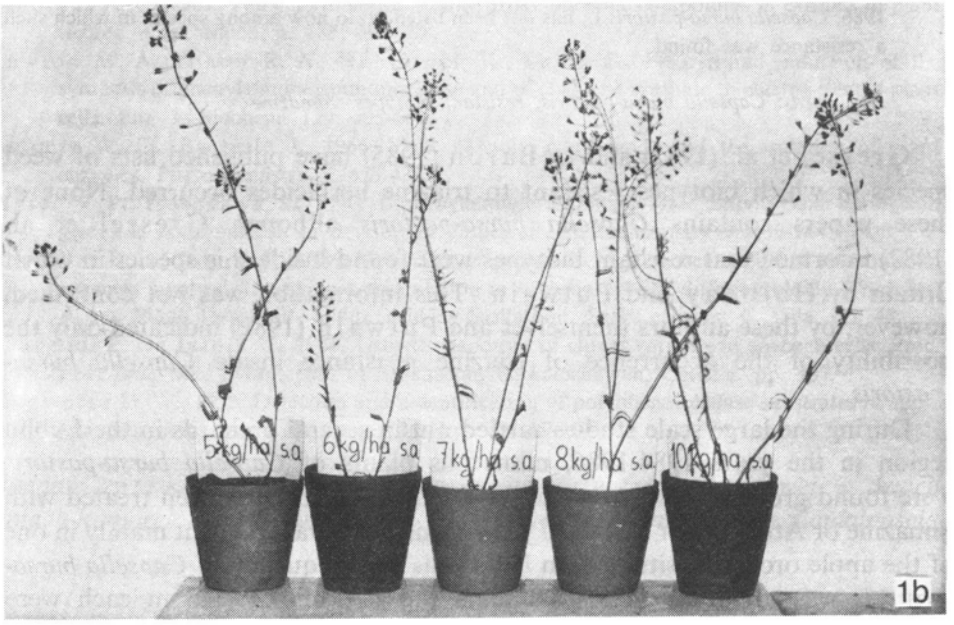


Fig. 1. *Capsella bursa-pastoris* L. plants treated with different doses of Simazine

Table 1

Weight of fresh mass of *Capsella bursa-pastoris* (average of 10 plants in each treatment) and the percentage of nitrogen of dry matter of plants depending on the Simazine dose

Dose of Simazine in kg ha^{-1} a.i.	Weight of one plant in g	% of nitrogen
1	0.77 ab	1.46 a
2	0.80 ab	1.64 ab
3	0.83 b	1.64 ab
4	0.73 ab	1.61 ab
5	0.68 ab	1.84 bc
6	0.71 ab	2.06 c
7	0.85 b	1.62 ab
8	0.64 ab	1.57 a
10	0.69 ab	1.86 bc
0 (control)	0.51 a	1.51 a

Note: averages followed by the same letters do not differ significantly at the 5% level of probability according to the Duncan's multiple range test.

was killed or injured. All of them survived. Seeds were collected separately from the plants treated with different doses of herbicide for further experiments. Some measurements and analyses of plants were also performed. Plants untreated with herbicide showed the lowest fresh weights and some of the differences between them and the treated plants were significant. All the treated plants (except the dose of 1 kg ha^{-1}) contained more nitrogen than the control ones.

The results described above mean that the studied biotypes of *Capsella bursa-pastoris* were resistant to Simazine, and this plant should be added to the list of species in which such biotypes appear. Enclosed are photographs of the experimental plants.

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Capsella bursa-pastoris (*L.*) *Med.* – *następny chwast odporny na symazynę?*

Streszczenie

Biotypy *Capsella bursa-pastoris* odporne na symazynę znaleziono w sadach w rejonie Lublina w latach 1984-1986. Odporność ta została potwierdzona w doświadczeniach wazonowych wykonanych w 1986 roku. *Capsella bursa-pastoris* nie był dotychczas wymieniany wśród gatunków, u których zaobserwowano pojawienie się odporności na symazynę.