

Spring mowing as tool for cereal volunteer control in Ryegrass



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Grass seed production has a long tradition in the Czech Republic and export of grass seeds is an important part of agribusiness. Ryegrasses cover more than half of areas grass seed crop. The most frequent preceding crop for Italian Ryegrass and Perennial Ryegrass in the Czech Republic are winter barley or winter wheat. Cereal volunteer is that common “weed” in Ryegrass seed crop and thus decreased the Ryegrass seed yield or threatens the certification of seed. In field trials conducted on Grassland Research Station at Zubří in 2013-15 the methods for cereal volunteers control in ryegrass seed crops were evaluated.

In trial was assessed the mechanic way of volunteer control - mowing with low stubble (3 cm) in two terms, compared with pesticide applications (glyphosate, metribuzin). The plots seeded by winter barley and winter wheat compared with plots without cereal contamination were used in trials. The best method for cereal volunteer control was mowing in first term – 10 days after spring growth revival, when was achieved 90-95% effectiveness in volunteers control and no effect on Ryegrass seed yield. Mowing at end of tillering has best effectiveness on volunteer control (98-100%), but also caused the seed yield decreasing. From herbicides the best volunteers control was achieved in metribuzin in dose 560 g a.i. per hectar, whose effectiveness reached 68–73%. On plots treated by glyphosate in dose 300 g a.i. per hectar or metribuzin in dose 350 g a.i. per hectar was effectiveness only 60-68%. The seed yield decreasing of ryegrasses caused by cereals volunteers amounting to 25-30% was observed. When the mowing was provided in first term, the seed yield of Italian ryegrass was higher about 6-10% compared with untreated control without cereals volunteers and on control level in perennial ryegrass. Mowing on end of tillering caused seed yield decreasing of Italian Ryegrass and Perennial Ryegrass for 15% and 30% respectively, compared with control plots without cereals. However, seed yield of both Ryegrasses, which were mowed at end of tillering, on plots contaminated by cereal volunteers were on the same level compared with control plots with cereal volunteers. Treatment by metribuzin or glyphosate caused Ryegrasses seed yield declination for 17-27% or 60-63% respectively. Based of trial results, the mowing of Ryegrasses in early spring is effective tools for cereal volunteer control in Ryegrasses seed crop in the Czech conditions. This method is widely used in practice now.

Figure 1 Efficacy of variant of treatment

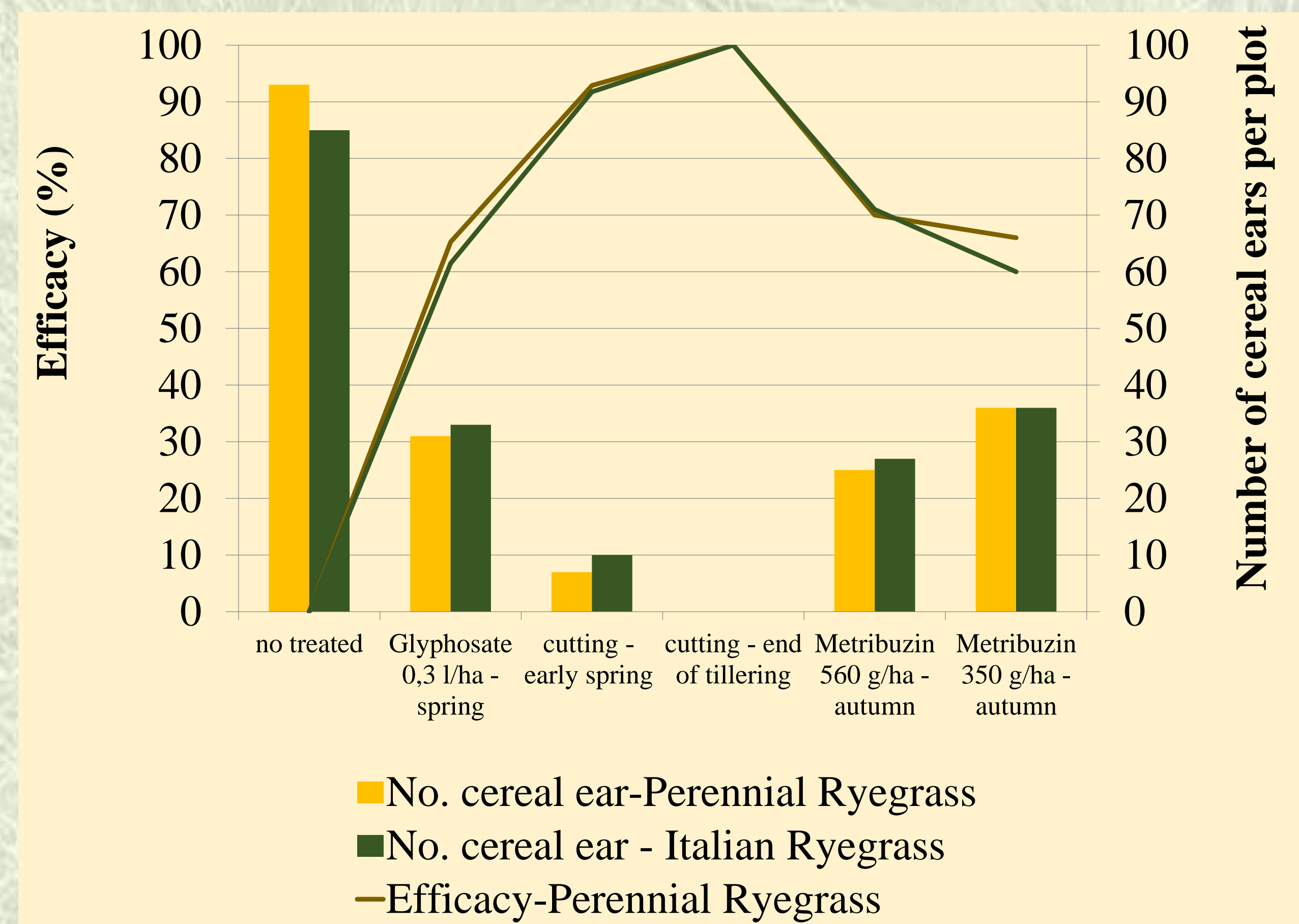


Figure 2 Seed yield of Perennial ryegrass

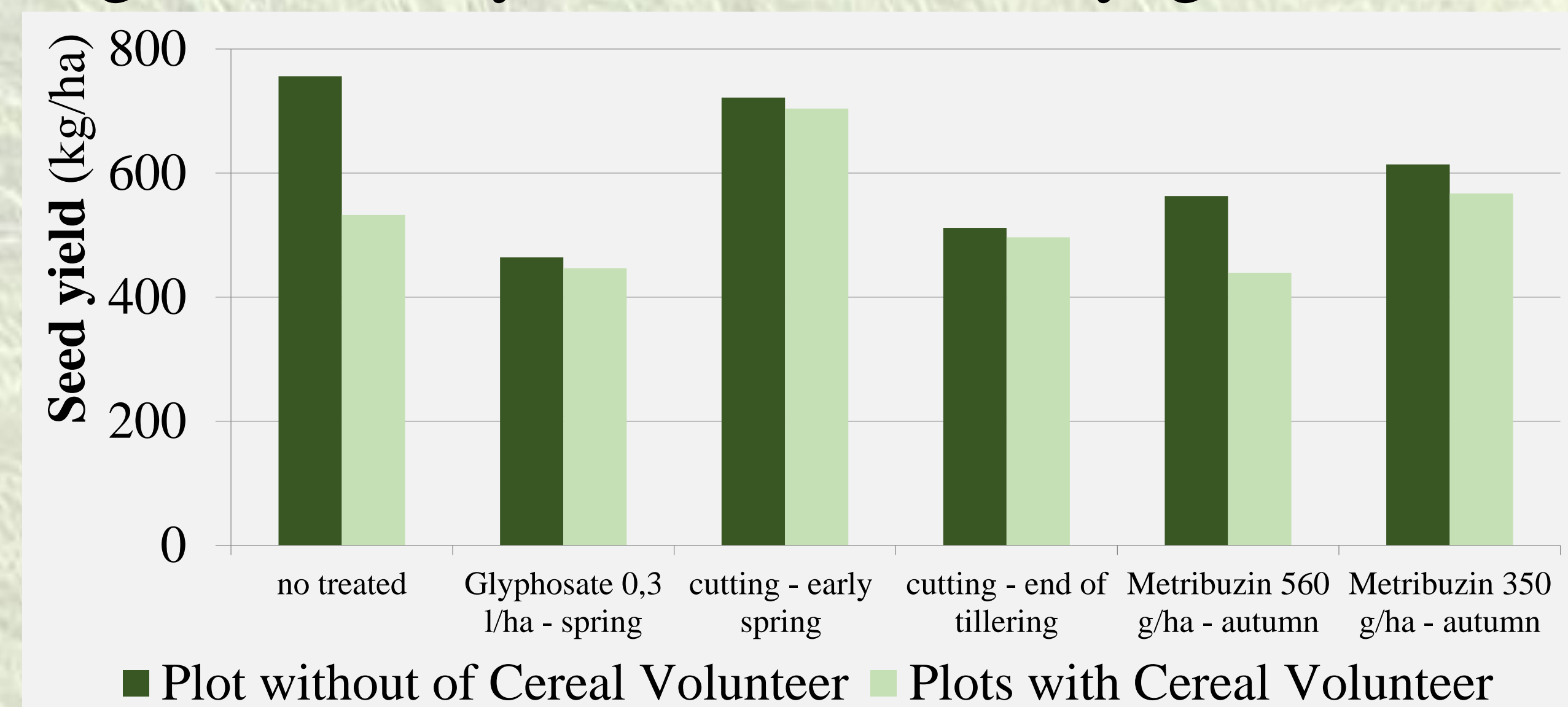


Figure 3 Seed yield of Italian ryegrass

