

066

CONTROL OF BLACKBERRY ON RICE CHANNEL BANKSSparacino A. C., Ferro, R., Riva N., Destefani G. P., Tano F.
Dipartimento di Produzione vegetale, Via Celoria 2, Milano, Italy.

Blackberry (*Rubus fruticosus*) is an aggressive perennial weed, which often invades irrigation channel banks. Trials were conducted in 2000-2001 in a rice field area of North Italy, near Milano, to evaluate the effects of glyphosate, glyphosate with different surfactants, triclopyr, picloram, different mixtures of glyphosate plus triclopyr, and fluroxypyr plus triclopyr, on blackberry control on rice channel banks. The treatments were carried out on August 3, 2001 and July 2, 2002. A randomized block design with 4 replications was used. The bank area of each plot was 12 X 2m. Sprays were applied with a backpack sprayer equipped with two flat-fan nozzles delivering 500 L ha⁻¹ at 200 k Pa. Observations were made to determine the percentage of ground cover by blackberry, percentage of blackberry control and percentage of new sprouts from each weed plant. At first, the best blackberry control was obtained with fluroxypyr plus triclopyr at 120+360, and 160+480 g a.i. ha⁻¹, with different surfactants. However their percentage of control decreased from the first (September 10, 2001) till the fourth observation (July 2, 2002) when the best performance was obtained with glyphosate+APG surfactant at 2160 g a.i. ha⁻¹, which controlled 96% of blackberry. The percentage of blackberry new sprouts per plant was reduced by all treatments, with the exception of heavy grazing. This last treatment performed well against the new sprouts grew from underground buds.

Keywords: weed control, blackberry, rice channel.

140

CHARACTERIZATION OF HYBRID POPULATIONS FROM RICE CROSSED WITH AWNED AND AWNLESS RED RICEGEALY, DAVID; Yan, Wengui; Rutger, J. Neil
USDA-ARS-DB NRRC, USA

Red rice (*Oryza sativa* L.) is a major weed of rice (*Oryza sativa* L.) in the southern U.S. and it intercrosses at low rates with the rice cultivars produced in this region. Knowledge of the plant phenotypes produced from such crosses may help farmers to accurately identify and manage crosses derived from specific red rice ecotypes and rice, including herbicide-resistant cultivars. F1 hybrids were produced by hand-pollinating male-sterile Kaybonnet and Cypress (southern long grain tropical japonica cultivars) with two awned and two awnless U.S. red rice types. Parental, F1, and F2 (>150) plants from these crosses were grown in the field under flooded conditions in 2002 at Stuttgart, AR. Phenotypic characteristics including tillering, tiller angle, leaf pubescence, culm and leaf color, plant height, days to flowering, awn length, hull color, and bran color were determined. F1 plants produced pubescent leaves and red bran color, confirming that these were dominant traits. The awned red rice crosses resulted in F1 plants with reddish-purple culms (not expressed in any of the parents) and flowering dates similar to both parents. Crosses with awnless Stuttgart strawhull red rice resulted in F1 plants with green culms and flowering dates later than either parent. Many F2 plants produced few or no seed, apparently because of sterility or because maturity was delayed to the point that heading and/or seed fill did not occur. F2 segregation ratios for phenotypic traits are being determined. Implications for identification and management of hybrid populations will be discussed.

094

ABILITY OF RICE CULTIVARS TO SUPPRESS *Echinochloa phyllopogon* (Stapf) Koss.Pérez de Vida, F.B.¹; Fernández, G.M.²; Fischer, A.J.³; Mackill, D⁴; Laca, E³. INIA, Treinta y Tres, Uruguay¹; Facultad de Agronomía-UDELAR, Paysandú, Uruguay²; University of California, Davis, CA, USA³; IRRI, Los Baños, Philippines⁴.

Enhancing cultivar weed suppressiveness can reduce weed control costs, environmental concerns and delay the development of herbicide resistance. The aim of this research was to identify plant characteristics associated with the ability of rice to suppress weeds. In 2000 and 2001, a pot experiment was conducted with seven rice cultivars grown weed-free or in competition with watergrass (WG). The experimental design was a randomized complete-block design with 5 replications. Data was subjected to ANOVA, correlation and path analysis. Cultivars differed in relative percent yield loss (YL=100-(yield in competition/weed-free yield x 100)), in their watergrass suppressiveness, and in the extent of suppression throughout the season. YL per unit WG biomass (WGb) at either 12 days after seeding (DAS), 36 DAS, heading or final harvest was similar among cultivars. WGb 36DAS was correlated with YL, and the ability of rice to suppress early weed growth was associated with plant height and leaf weight ratio at 36 DAS, but not with plant height at 12 DAS (path coefficients, β , to WGb 36 DAS were -0.33**, -0.21*, and 0.30**, respectively). WGb at harvest was not correlated with WGb 36 DAS, thus, certain cultivars were more suppressive of late rather than early WG growth and viceversa. Cultivar performance under competition depended on weed suppressiveness rather than on the magnitude of yield losses per unit of competitive weed biomass. Keywords: competitive cultivars, weed suppression, weed tolerance, *Echinochloa phyllopogon*, rice.

153

RED RICE SEEDS VIABILITY IN SOILFRANCO, D.F.; PETRINI, J.A.; MAGALHÃES JR, DE, A.M. Embrapa
Clima Temperado. Cx. Postal 403. CEP 96001-97°, Pelotas, RS, Brazil.

The objective of this work was to study the viability of red rice seeds in the soil, during a four years period. The work was conducted at the EMBRAPA Temperate Climate, from april 1994 to april 1998. Two thousands, non-dormant seeds, of red rice were mixed into a sieved soil taken from a rice cropped field, fitted to plastic meshed bags (12 X10 cm) and stored in 12 cm deep soil trenches. At three months intervals one of these plastic bag was open and the seeds washed and separated into viable and non-viable seeds. From the viable seeds two repetition of 100 seeds were taken from the germination test, without treatment overcoming the dormancy. The seeds which did not germinate were submitted to the tetrazolium test for verification of viability. The results allowed to conclude: there was a reduction of 98,8% in the amount of viable red rice seeds stored in the soil; the red rice seed acquired secondary dormancy three months after the begin of the soil storage; the percentage of dormant red rice seed stayed constant during the period of this study; the secondary dormancy of the red rice seeds is rapidly overcome after the treatment for overcoming was applied.

Key words: rice, dormancy, germinability.