

ANNUAL WEED CONTROL IN CEREAL CROPS WITH TRIBUNIL

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Timing of weedicide application to cereal crops for post-emergence weed control is limited to the period of crop tolerance. With 2,4-D this period is restricted, and crops must have tillered before 2,4-D is adequately tolerated. By this time annual weeds are usually well established, having come up with crops or soon after.

Maximizing benefits of post-emergence weed control plainly depends on removing the competitive effect of weeds as soon as it begins to be exerted. Just when this occurs has not been defined for the multiplicity of weed problems in Australian crops. It is widely held that control of weeds during tillering leads to greater benefits than later removal.

Tribunil is a new weedicide which controls a wide range of annual broadleaf weeds and allows weed control at the most desirable time. It contains 70% methabenzthiazuron, has a low oral LD50 value (3,500-4,000 p.p.m.), and presents no undue handling hazards, residue, or wild-life problems. Thus for Tribunil 70% w.p., emphasis has been placed on establishing tolerance of young wheat while weeds are still young.

In one trial, Falcon and Festiguay wheats were sown in a paddock predominantly infested with *Raphanus raphanistrum*, they were treated 15, 27, 41, and 71 days later when the crop was in the one, two to three, four to six leaf and tillered stages respectively with 1, 3, and 6 lb (1.12, 3.36, and 6.72 kg per hectare) Tribunil 70% w.p. per acre.

All treatments effectively controlled weeds, and there was a significant grain yield increase with all treatments, with no significant differences between interactions of rate, time, or variety.

Grain yield expressed the sum of the value of removal of weed competition and any effect of Tribunil on the crop. Direct effect of Tribunil on the crop was not measured. However, the significant yield increase at the highest application rate - six times the amount required for weed control - indicated that crop tolerance level is high. Of greatest practical significance was the evidence that crop tolerance was high when wheat emerged and remained high through early growth stages till tillering was completed and jointing begun.

A subsequent trial on weed-free Heron wheat in the one leaf stage 3 weeks after sowing and treated with up to 4 lb Tribunil 70% w.p. per acre (4.48 kg per hectare) confirmed the high

tolerance of wheat at emergence. There was no difference in grain yield between treated and untreated plots.

Other trials with other varieties in early growth stages likewise confirmed the tolerance of wheat - even though under unusually mild growing conditions wheat has yellowed for a short period beginning 7-10 days after spraying.

Many trials, some logarithmic, established that a wide variety of the broadleaf annual weeds of Australian wheat crops were susceptible to less than 1 lb Tribunil per acre (1.12 kg per hectare). Pre-emergence activity has been observed at rates of 0.75 lb per acre (0.82 kg per hectare).

Even though there is variation in specific weed susceptibility, one application of 0.75 lb per acre (0.82 kg per hectare) applied as soon as all weeds emerge has been recommended for amsinckia, capeweed, deadnettle, corn gromwell, spiny emex, stagger weed, spurry, variegated thistle, dwarf nettle, poppy, ice-plant, mustard, wild radish, and wild turnip.

However 8 oz per acre (0.56 kg per hectare) is recommended for very young wild turnip, spiny emex, and deadnettle.

Thus Tribunil provides a flexible management tool for annual broadleaf weed control in wheat because no longer is there need to adjust spray timing to a particular period of crop tolerance.

Furthermore any combination of the major annual broadleaf weeds can be controlled with one application rate at the earliest possible time to maximize benefits of removing weed competition.

#### WHEAT CULTIVAR TOLERANCE TO BARBAN

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It has been suggested that the reasons for the lack of wheat yield response in Victorian experiments where wild oats have been controlled by barban may have been associated with the use of the variety Olympic in the experiments. In comparisons at the Rutherglen Research Station in 1968 and 1969, the tolerance of Olympic, Sherpa, and Gamenya, (a variety of reputedly high tolerance) was assessed.

In both years the experiment was a randomized block design of four replicates with barban applied at 0, 2.5 (0.17), 5.0 (0.35), and 10.06 (0.70) oz a.i. per acre (kg a.i. per hectare) when the wheat was at the 1½-2½ leaf stage. In three additional treat-