ANNUAL
WEED
CONTROL
in western washington
PASTURE
& HAY
SEEDINGS
ANNUAL WEED CONTROL
In Western Washington Pasture and Hay Seedings

by
Dwight V. Peabody, Jr.
and
Ben Roche

Annual weeds are a serious and expensive problem in new forage seedings. Many weeds grow faster than the legumes and grasses and soon dominate the stand. The principal methods of annual weed control are either mowing the weeds or seeding a cereal companion crop with the forage to shade the weeds. The companion crop is harvested for hay, pasture or grain. Regardless of how the companion crop is used the legume-grass seedings are set back by the competition from the faster growing cereals. In dry years, the grass and legume seedings are sometimes permanently injured or completely killed out.

Research at the Northwestern Washington Experiment Station at Mount Vernon has shown that many of these annual weeds can be controlled without injury to grass and legume seedlings by means of a chemical weed killer.

Recommended Chemical Treatment

DNBP amine\(^2\) is the only chemical recommended for the control of annual weeds in new seedings of grass and legumes. Two quarts of amine (1.5 pounds active ingredient) in 30 to 50 gallons of water per acre is recommended. Use low pressures (30 to 40 pounds per square inch.)

Best results are obtained if this treatment is applied during warm, dry weather. Permit early morning dews to evaporate before spraying. At least 12 hours should elapse between time of application and rain. Do not use DNBP amine with emulsifiable liquid formulations of insecticides.

When temperatures are 75°F. or higher, decrease the rate of application to 1½ quarts of amine in 30 to 50 gallons of water per acre to prevent possible "burn injury" to peas and young clover.

Time to Spray

The time to apply the amine-water mixture is dependent upon the stage of growth of the legumes. Before amine can safely be applied, the legume should have developed to the 3-leaf stage as in the drawing at the right. The weeds should

\(^1\)Assistant Agronomist, Northwestern Washington Experiment Station, Mt. Vernon, and Extension Weed Specialist, W.S.U., respectively.

\(^2\) Corwin Johnson cooperated in preparation of original material.

DNBP amine (often called dinitro amine) as sold under the trade names of "Premerge" and "Sinox PE" is registered for this use with the following limitation:

"DO NOT graze livestock on treated areas before the first cutting".

"The first cutting CAN BE used for hay and then fed to any livestock".
be sprayed as soon as possible after the legumes have reached this stage of
growth, since annual weeds become more resistant to amine as they mature.

Weeds That Can Be Controlled

Annual weeds, especially those of the mustard family, are quite susceptible
to this spray. Smartweed, wild buckwheat (black bindweed), chickweed, common
groundsel, and many other broadleaved weeds are easily killed with dinitro amine
in the seedling stage of growth. Pigweed and lamb's quarters are less sus­
ceptible but are usually held in check until the grasses and legumes can compete
with them.

Spurry, wild carrot, dog fennel, and pineapple weed are usually not killed by
this spray. Some seedling species of perennial weeds may be controlled but
those perennial weeds which come from old roots and underground rootstocks are
not killed by this spray.

Increase in Forage Yields

When a grass-legume mixture was planted without a companion crop, the use of
two quarts of dinitro amine per acre controlled the annual weeds sufficiently
to increase the yield of forage from nearly three-quarters of a ton per acre
(dry material) for the unsprayed area to two tons per acre for the sprayed area.

The yield of the weeds on the unsprayed pasture was far greater than the yield
of the high quality grass-legume forage.
The Effect of Amine on Weed Control and Yield (Dry Weight) of New Pasture and a Companion Crop of Oats
Where a companion crop of oats was planted with the grass-legume seedings, the application of amine still had a noticeable effect on the reduction in weed population and increased the yield of the companion crop and the grass-legume forage.

On the area not sprayed with amine, the grass-legume and companion crop yielded one and one-third tons of dry matter per acre. On the area that was sprayed, the yield of grass-legume and companion crop yielded one and three-quarters tons of dry matter per acre.

Because of the competitive effects of companion crops to seedings of grass and legumes, and because of the large increase in yields from using amine where no companion crop was planted, the new weed killer may take the place of companion crops as a weed control measure. The graphs show that more desirable forage can be obtained in the seeding year by spraying with amine than can be obtained by planting a companion crop. Spraying has returned one and one-half tons more usable forage than where mowing was used as a weed control method. In addition to these increased yields, forage plants which were sprayed were more vigorous and will result in a much better stand than when either mowing alone or a companion crop are used to control the weeds.