

Update on herbicide usage

R. Ashford

Crop Science Department, University of Saskatchewan

Since the topic at hand is so broad I will only be able to cover highlights of newer trends in chemical weed control in major crops in Saskatchewan. To facilitate this discussion, I will start out with some general remarks that hopefully will help to bring present day trends in herbicide usage into focus. I will then deal with major changes in recommendations in recent years as they apply to individual herbicides.

General remarks. A major problem facing the herbicide industry is the ever-increasing costs for research and development of new products. For this reason, we should not expect to see radical changes over short-term periods with respect to the type of chemistry used in the active ingredients of herbicides. Understandably, there is an increasing tendency nowadays for companies to do what they can to extend the scope of their registered compounds. In particular, it is especially difficult to find products that combine the required crop tolerance with the ability to provide complete spectrum weed control. This explains why there is presently such an active interest in the use of tank-mixtures of herbicides. However, a considerable amount of field testing of a multitude of combinations is required before mixtures can be registered. Problems of incompatibility between herbicides when they are mixed may occur in the tank or in the plant following application. This alone is good reason for recommending only those mixtures that have been approved.

With respect to the controversial matter of whether or not additional wetting agents or other adjuvants should be included in the spray solution, there are several good reasons why most weed workers (including me) still adhere strictly to the old rule of thumb which is "Follow label instructions". Unfortunately, I do not have time to pursue this matter further at this work shop.

While it can be dangerous to generalize about weeds and weed control, I am on fairly safe grounds when I say that the newer herbicides are a much more sophisticated group of compounds than the old standbys such as 2,4-D or MCPA. At time of application most newer herbicides demand much more careful attention to such factors as the stage of growth of the crop and the weed, and also to proper operation of the sprayer.

There is reason for some concern about recent trends in the development of sprayer equipment. For instance, the number of floaters being used for application of herbicides in Saskatchewan could achieve significant proportions in a short period of time. Unfortunately, information on the efficacy of herbicides applied by this type of equipment is not readily available to the research worker. In effect, we will have to rely to a larger extent on farmer experience. It is to be expected that some of our present-day herbicides may not perform satisfactorily if applied by floater. Until we know better, it would seem wise to exercise precaution before approving the use of floaters to apply some postemergence herbicides, particularly those which are known to have special application requirements.

The following update on specific herbicides is confined to herbicides for which major changes in recommendations have occurred in the last three or four years. Additional information can be obtained from the SDA publication "Chemical Weed Control in Cereal and Oilseed Crops, 1979".

Avadex BW (triallate). The major change in recommendations is to the effect that although fall-applied Avadex BW must be incorporated in the soil to prevent overwintering losses, it is possible to delay part of the incorporation procedure until spring, especially when using granular formulations.

Avenge 200-C (difenzoquat). Several tank-mixtures with broadleaved herbicides now are approved for use on barley and Neepawa and Glenlea wheat. Avenge should not be tank-mixed with 2,4-D amine, MCPA amine, or dicamba, or mixtures containing these products.

Buctril M, Brominal M (Bromoxynil plus MCPA). Recently registered for control of seedlings of scentless chamomile in wheat, barley and oats.

Carbyne (barban). The only approved tank-mixture is Carbyne plus Endaven for use in spring wheat with the exception of Selkirk. Operating instructions for the sprayer are the same as for Carbyne alone, and should be adhered to as closely as possible.

Cobex (dinitramine). Some problems were reported in rapeseed in Saskatchewan in 1978. There has been a tightening up in the recommended use on rapeseed this year to minimize risk of crop damage and ensure optimum weed control. In general, application in the spring for rapeseed is recommended only under special circumstances in Saskatchewan. Depth of seeding rapeseed should be restricted to 1 inch or less in Cobex-treated soil.

Endaven (benzoylprop ethyl). This product is not being recommended for use on rapeseed in Saskatchewan in 1979.

Hoe-Grass (diclofop methyl). The use has now been extended to include application to barley with the exception of Klages and Betzes. In addition, several new crops will be added to the label in 1979, including winter wheat, fall and spring rye, as well as a number of grasses and legumes. Hoe-Grass is registered also for use in tank-mixture with Torch (bromoxynil) for application to wheat, barley (except Klages and Betzes), and flax.

Mataven (flamprop-methyl). This is a fairly similar product to Endaven and is registered for use on spring wheat with the exception of Selkirk. No tank-mixes with Mataven and other herbicides are approved at this time.

Roundup (Glyphosate). This product is also registered now for spot treatment of perennial weeds in wheat, oats, and barley. The crop in the treated area will be killed. Roundup should not be used in galvanized or black steel spray equipment. Inactivation of Roundup may occur in hard water, particularly at lower rates of application such as used for control of annuals in zero tillage.

Sencor, Lexone (metribuzin). These are wetttable powder formulations registered recently for use on barley with the exception of Klondike. They control several broadleaved annual weeds including some hard-to-control species such as hemp nettle and chickweed. A tank-mixture with MCPA is approved.

Stampede (propanil). A new formulation of Stampede known as Stampede CM will be on the market in 1979. It will be a mixture of propanil plus MCPA ester (3.6 lb. of propanil plus 1.0 lb of MCPA per Imperial gallon). It will be approved for application to spring wheat and barley. Inclusion of MCPA with the propanil will provide satisfactory control of flixweed, wild mustard, kochia, and volunteer rapeseed in addition to the annual weeds controlled by propanil alone. Propanil alone could be registered for use on oats and flax in time for application in 1979.

Torch (Bromoxynil). This product serves a very useful purpose in that it can be tank-mixed with Hoe-Grass to provide broad-spectrum weed control. Also, it does not require as long an interval between its use and products such as Endaven and Mataven as does 2,4-D or dicamba.

Tordon 202-C (picloram plus 2,4-D 1:16). Provides relatively low cost control of a number of difficult-to-control broadleaved weeds in barley and wheat. Some sensitive crops such as sunflowers, beans, peas, and potatoes, cannot be planted in the year following treatment. Several other precautions must be observed at time of application.

Treflan (trifluralin). In addition to its use with rapeseed, Treflan is approved for application as a post-seeding treatment to wheat and barley, with or without tank-mixing with Avadex BW. The tank-mix of Treflan and Avadex BW is recommended only for control of wild oats and green foxtail in wheat and barley, and is not recommended for use with rapeseed. It should be noted also that only the liquid formulation of Treflan is recommended when this herbicide is applied post-seeding to wheat and barley in Saskatchewan for control of green foxtail.