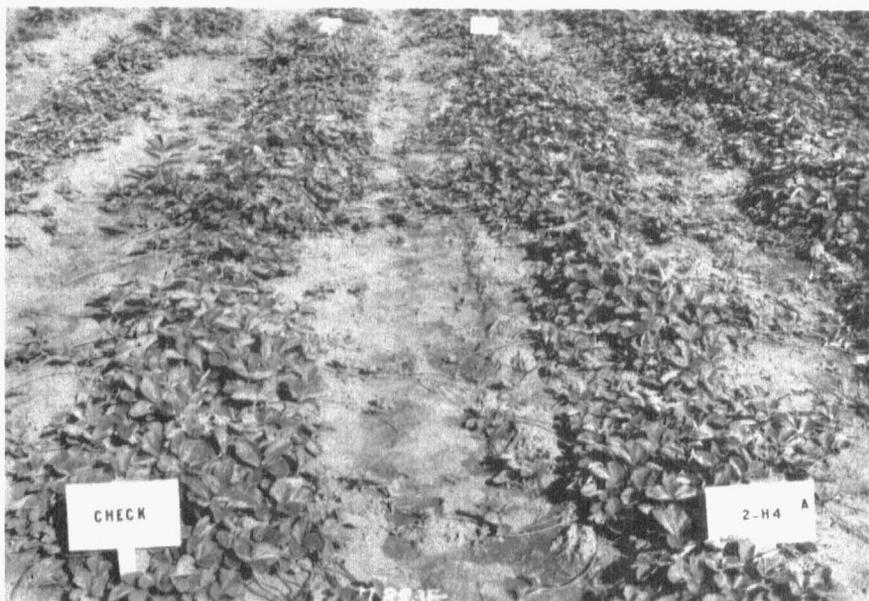


A New Chemical for Weed Control in Strawberries

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Chemical sprays save hand labor. The unsprayed row at the left was kept clean by means of many hoeings, while that at the right had three sprays and only one hoeing.

A new chemical weed killer will be available in 1952 for weed control in strawberries. This chemical is of special interest because it has the killing properties of 2,4-D, yet is many times safer to use. It is relatively safe to use near vegetables, flowers, grapes and other 2,4-D sensitive plants because it acts only through the soil. *Excessive spray drift, however, must be prevented.* Important also is the fact that this material can be washed from sprayers very easily.

Technically the new herbicide is Sodium 2,4-dichlorophenoxy ethyl sulfate, but it has been known by the shorter name of EH-1 during the period of its experimental use. It has been given a new designation and in the future it will probably be known as SES. At present it is sold under the trade name of Crag Herbicide 1.

EH-1 becomes an effective herbicide only after it undergoes certain changes in the soil which take place as a result of soil micro-organism activity. It does not cause as serious damage to plants as 2,4-D when sprayed on the plant because; first, it is not a highly toxic chemical as it comes from the sprayer and secondly, it is absorbed to only a limited extent by the leaves.

This herbicide is effective against weeds only in the germinating stage and therefore must be applied to clean ground ahead of weed seed germination. The toxic chemical is absorbed by the seedling and at this stage it is unable to tolerate the poison.

Experiments have been conducted at the Missouri Agricultural Experiment Station for the past two seasons with this chemical. In 1950 it was tested in strawberries and in 1951 it was used experimentally in strawberries and certain other crops.

It appears to be worthy of recommendation for use in strawberries and shows promise for use in asparagus and brambles, although additional investigational work is necessary before it can be recommended for use in crops other than strawberries.

For best results in strawberries apply a few days after setting *but before grass and broad-leaved weeds germinate*. Use at the rate of 3 to 4 pounds per acre. Rates higher than 4 pounds reduced runners considerably. You may spray the whole field or only a strip 12-18 inches wide along the row. If you spray only a band over the row you will actually be using only 1 to 1½ pounds of chemical per acre.

To regulate the amount of chemical applied you must know the volume of spray that your sprayer delivers per acre. Determine this by spraying a measured area.

Successful use of selective herbicides in crop plants is dependent upon the proper application of the desired amount of chemical.

An application of EH-1 will keep down weed growth for three weeks or longer depending on amount of rainfall. In some seasons two applications may control the weeds adequately while in rainy summers such as 1951 four or more applications may be necessary.

It is effective in the control of fall-germinating, overwintering weeds, such as chickweeds and appears safer to use during the period of fruit bud differentiation (August 15 to October 15) when 2,4-D will cause fruit, leaf and runner deformities the following spring.

With many vegetable plants enough of this chemical is absorbed through

their roots to cause death or severe deformities. Use this material with caution, even though it is much safer than 2,4-D.

WEED CONTROL SPRAY PROGRAM

A suggested spray program for weed control in strawberries using 2,4-D and EH-1 is outlined below.

New Planting

Treatment at Planting.—2,4-D (amine salt) 2 to 4 pounds per acre applied to the prepared soil just before setting.

or EH-1, 4 pounds per acre applied a few days after setting *but before the weeds germinate*.

Spring and Summer Treatments.—Second treatment may be made approximately four weeks after the first or may be delayed until after runner plants are setting and weeds cannot be controlled by cultivation.

Use 2,4-D (amine salt) 1 to 1½ lbs. per acre or EH-1, 3 to 4 lbs. per acre (preferred).

Both materials must be applied to clean soil to be effective against all weeds.

If third and later treatments are made approximately four weeks after the preceding treatment, little or no hand weeding will have to be done before treatment. Use same materials and rates as in second application.

Do not use 2,4-D during the period of fruit bud differentiation (August 15 to October 15.)

Fall Treatments.—This is primarily for the control of fall-germinating over-wintering weeds.

Use 2,4-D (amine salt) 1½ lbs. per acre *applied after October 15*.

or EH-1, 4 to 6 lbs. per acre. EH-1 may be applied during fruit bud differentiation and probably should be applied in September ahead of fall germinating weeds.

Fruiting Fields

Early Spring Treatments.—Apply at mulch removal or just as new leaf growth begins. This may not be necessary if field was treated the preceding fall.

Use 2,4-D (amine salt) ¾ to 1 pound per acre or EH-1, 4 pounds per acre (preferred).

A second application may be made just as blooming begins if the field is especially foul *but EH-1, 3 pounds per acre is the only material that can be used safely at this time*.

Summer Treatments.—Apply immediately after harvest and after mowing off old foliage.

Use 2,4-D (amine salt) 2 pounds per acre or EH-1, 4 to 6 pounds per acre.

Probably 2,4-D is the most satisfactory material for use at this time.

Repeat applications may be made every four weeks until August 10-15. 2,4-D causes deformed fruit if sprayed during period of fruit bud differentiation (August 15 to October 15).

Fall Treatments.—Same as for New Plantings.