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BAIT MIXING EQUIPMENT USED IN
VERTEBRATE PEST CONTROL

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It was with pleasure that I accepted Jim Koehler's invitation to speak to this conference. The Sonoma County Board of Supervisors recently engaged an architect to design a new county building, part of which is to house our new poison bait mixing plant. The photographs which I have obtained in preparing this talk will be of great assistance in our planning.

I would like to discuss with you the reason why agricultural commissioners are in the poison bait business. The following are excerpts from the Agricultural Code of the State of California. Section 100 describes a pest as follows: "Pest means any of the following that is, or is liable to be dangerous or detrimental to the agricultural industry of this State" and for the purpose of this talk only part two of this section is cited which states, "any form of animal life." This is the part which covers vertebrate pests.

Section 102 states, "Each commissioner is an enforcing officer of all laws, rules and regulations relative to the prevention of the introduction into or spread within the State of pests and as to such activities is under the supervision of the director." (Director means the Director of the California State Department of Agriculture.)

Section 129 states, "The commissioner, whenever he deems it necessary, may enter and make an inspection of any premises, plant, conveyance or thing in his jurisdiction and if found infested or infested with a pest, etc., etc. - - -." This section and following sections provide the means by which abatement proceedings are carried out.

To further facilitate the control of vertebrate pests, County Boards of Supervisors authorized their agricultural commissioners to prepare poison baits and sell them at cost and in some instances distribute them at no cost. This has been a common procedure since 1917 when the State Law prescribed rodent control as a specific function of the established agricultural regulatory set-up.

Since 1917 large quantities of poison baits have been prepared. The 1920 Annual Report of the California Department of Agriculture states that counties in that year used 928,538 pounds of strychnine bait for ground squirrel control. The agricultural commissioners have prepared and distributed an average of almost a million pounds of various poison baits per year. In addition to ground squirrels, baits are prepared for Kangaroo rats, meadow mice, rats, gophers, muskrats, jackrabbits and depredating birds.

Bait mixing equipment remained quite simple for a number of years and consisted primarily of a rectangular box and a square nose shovel. In recent years there has been a replacement of hand mixing to mechanical mixers.

The mechanical mixers vary considerably. The most common type is the concrete mixer. Other types are the mortar mixer; the vertical mixer and blender; the U.S.D.A. grasshopper bait mixer; the Bucklein, a recently available commercial poison bait mixer; mixers made in county shops and suspended at diagonal corners and other similar types.

The concrete mixers are of various sizes. We prepare one hundred pounds at a time in our five cubic foot mixer. The material is thoroughly mixed in 8 to 10 minutes and as a result of the tumbling action dries at the same time.

The mortar mixer mixes two hundred pounds of whole grain and one hundred fifty pounds of rolled grain at a time.

The vertical mixer-blenders are available in various sizes and mix from fifty up to several hundred pounds at a time. The one which we have is designed for a maximum capacity of one thousand pounds. We mix eight hundred pounds of warfarin rolled wheat bait at one time in just a few minutes.

The U.S.D.A. grasshopper bait mixer is of the 1930's vintage. Several counties secured them as surplus and are using them for mixing rodent baits. It is powered by a five horsepower air cooled engine and is capable of mixing from one thousand to fifteen hundred pounds of baits per hour. From two hundred to three hundred pounds are mixed in each batch.

The Bucklein grain mixer model 200 is manufactured by the Bucklein Corporation, 303 Potrero Street, Santa Cruz, California. Recently a number of them have been purchased by agricultural commissioners. The specifications state that it has a capacity of two hundred pounds of grain, mixes thoroughly in 2 to 2½ minutes and empties in 2 to 3 minutes. Reports from counties using them are generally favorable except that for smooth grain, such as wheat, it is not satisfactory. Some difficulty has been reported in emptying completely.

Counties which have constructed their own mixers report good success with them. Many of them are suspended at diagonal corners so as to get a tumbling action when revolving. Units are capable of mixing up to four hundred pounds in each batch.

The following slides will show a number of these mixers. I will also show some of the safety features incorporated in the most recently constructed mixing plants. I am indebted to Ted Eriksen, Agricultural Commissioner of Mendocino County, Raymond M. Schneider, Agricultural Commissioner of San Bernardino County, A. E. Mahoney, Agricultural Commissioner of San Joaquin County, L. O. McCorkindale, Agricultural Commissioner of Fresno County, Richard T. Straw, Agricultural Commissioner of Marin County and George Pohl, Agricultural Commissioner of Solano County, for their assistance.

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