

# Anemia

## in baby pigs can be prevented

Hubert Heitman, Jr.

BABY PIGS apparently are born with only enough iron reserves stored in their livers to last them for a period of about seven to 10 days.

Under special conditions, or at certain times of the year, when it becomes necessary to keep the litter in the farrowing barn on clean wooden or concrete floors for longer than the first week of life, nutritional anemia is almost certain to occur. This anemia develops quite rapidly, and, in the early stages, it is impossible, merely by looking at them, to tell an anemic pig from one that is normal. In the later stages, lack of vigor of anemic pigs is noticeable, their breathing becomes labored, there is paleness of the skin and usually growth is impaired.

### Blood of Light Color

If the blood of the animals is examined, it will be found light in color because it is severely lacking in the red pigment, known as hemoglobin, which is essential in the transportation of oxygen from the lungs to various tissues of the body.

Anemic pigs are not only unthrifty but uneconomical.

Data from the California Experiment Station indicate that mild anemia develops rapidly after the seventh to 10th day of age when pigs are kept under the conditions described above.

By one month of age the hemoglobin of the blood may be as low as 10% of that in a normal pig.

The mother's milk cannot help anemic pigs because milk is deficient in iron. Feeding iron to the sow does not help the pig at all. Severe anemia can be easily corrected by administering a solution of iron salts—one teaspoonful daily of a solution made by dissolving 3.6 ounces of ferric sulphate in five quarts of water—to the pigs.

### Preventive Measures

For preventive purposes, the easiest method is to throw a shovelful of fresh dirt into the pen at frequent intervals. About 5% of the earth's crust is composed of iron compounds.

When dirt is used, be sure it is not infested with eggs of round worms and avoid the use of extremely sandy soil which is usually low in iron.

Other methods of prevention are painting the udder of the sow with a solution of iron salts similar to that mentioned above, or it has been demonstrated that by merely throwing the solution of iron salts on the floor the baby pigs will lick up sufficient to meet their requirements.

### Pasture Recommended

A good practice is to keep baby pigs on concrete or wooden floors not longer than the first week or 10 days of life, but instead to put them on pasture where they will usually obtain enough iron from the soil to fill their needs.

If baby pigs are kept in the barn for more than this period without any preventive measures, some degree of anemia is certain to develop.

The progressive swine grower should insure against the development of nutritional anemia as it is one of the easiest of all diseases to prevent when the problem is understood.

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Effects of population changes on the California deciduous fruit industry are under study by the Division of Agricultural Economics.

## LEAF MINER

Where an overhead sprinkling system is used the plants should be watered prior to dusting so that they can go as long as possible without watering after the dust is applied.

Two to three weeks before cutting begins the grower should change from the dust to a chlordane emulsion spray to avoid the objectionable benzene hexachloride odor. The chlordane emulsion leaves no odor or visible residue and the last spray should be applied at the time cutting begins in order to protect the foliage during the cutting period.

### Sprays

For those growers who prefer to spray, a chlordane emulsion or wettable powder spray containing 1.5 pounds of actual chlordane per 100 gallons is suggested. With a commercial emulsion containing 50% chlordane by weight, 1.33 quarts or 43 ounces of the emulsion per 100 gallons of water is required.

Applications should begin when the plants are small and before the infestation has a chance to build up. The sprays should be applied every two weeks with

the last spray applied at the time cutting begins.

Since there is a slight visible residue from the wettable powder it may be advisable to change to the emulsion for the last two sprays.

To clean up a heavy infestation of leaf miner a chlordane emulsion spray containing 2.25 pounds of actual chlordane per 100 gallons is suggested as this is the only treatment that has been tested under severe conditions. This will require two quarts per 100 gallons of an emulsion containing 50% chlordane. Repeated applications should be made at two-week intervals.

### Management

Old asters should be disked under as soon as cutting is completed in order to prevent a build-up and spread to later plantings. Growers should watch closely for the appearance of larval mines, adults and feeding punctures so that control measures may be applied before the infestation reaches serious proportions and control becomes more costly.

The cost of insect control should be included with other production costs and adequate spraying and dusting equipment

should be available. With both sprays and dusts thorough coverage of the foliage is essential for effective control.

### Caution

It should be emphasized that the above suggestions are based on only one season's experimental work. More extensive tests are planned for 1948 and may result in their modification.

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The Division of Entomology is making studies of where honey bees feed and how their feeding is related to applications of insecticides, as part of the work on dusting agricultural crops grown for seed.

The Agricultural Engineering Division is studying the effect of surface climate on pest-control applications: relation of particle size to drift; electrostatic effects on dust applications; sulfur-dust fire hazards; eddy-diffusion from forced turbulence; water globules and carrying effects of sprays.