



Department of
Primary Industries and
Regional Development

Journal of the Department of Agriculture, Western Australia, Series 3

Volume 8
Number 5 *September-October, 1959*

Article 10

10-1959

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Wilkinson, F. C. (1959) "Vitamin A deficiency in pigs," *Journal of the Department of Agriculture, Western Australia, Series 3*: Vol. 8: No. 5, Article 10.

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Vitamin A Deficiency in Pigs

By F. C. WILKINSON, B.V.Sc., Veterinary Surgeon

VARYING degrees of Vitamin A deficiency are often seen in pigs which do not have regular access to fresh green feed and do not have a special Vitamin A supplement added to their feed. The deficiency may show itself as failure of the sows to come into season, the birth of dead and malformed piglets, or the birth of weak piglets which die soon after birth. Those Vitamin A deficient piglets which do survive are very susceptible to infectious diseases and often show varying degrees of paralysis. Boars kept on a diet deficient in Vitamin A become infertile.

Unlike such grazing animals as cattle and sheep, pigs are commonly enclosed in pens or yards without access to green feed, the natural source of Vitamin A. Their main foodstuff whether it be grain, boiled garbage, or skim milk is very low in Vitamin A and often insufficient to supply the pigs' requirements.

Green feed has been mentioned above as the main natural source of Vitamin A. Strangely enough there is no Vitamin A in green feed but there is a high percentage of carotene, a chemical compound which when eaten by the pig is absorbed and changed by the tissues of the body into Vitamin A. The Vitamin A so obtained is stored in the liver where it is given up slowly as required by the animal.

The main tissues for which Vitamin A are essential are—

(1) **Lining Tissues.**—Vitamin A is needed for the normal health, structure and function of all lining tissues of the body but more especially those of the eyes, respiratory system and reproductive tract.

(2) **Bone.**—Bone growth, especially the control of the shape of the bones in young growing animals, is controlled by Vitamin A. A deficiency of Vitamin A leads to abnormal bone growth of the head and spine with pressure on the brain and spinal cord, which are enclosed in their bony structures.

(3) **Eyes.**—For night vision a special chemical is required and to produce the chemical, Vitamin A is necessary.

SYMPTOMS OF VITAMIN A DEFICIENCY

Adult Pigs.

Rarely are adult pigs visibly affected by a Vitamin A deficiency. Night blindness, which is a common symptom, is very seldom noticed by the owner. In severe cases the sows either fail to come into season or infertility is common. Boars deficient in Vitamin A are also infertile.

Weaners to Baconers.

In this group the commonest symptom seen is paralysis. The paralysis usually begins with incoordination of the gait and swaying of the hindquarters.

This gradually progresses until the hindquarters are completely paralysed. The pig eats normally and growth rate is not greatly affected. In some cases the affected pig will live indefinitely while in other cases increasing pressure on the nervous system leads to nervous fits and death.

New Born Piglets from sows deficient in Vitamin A may be affected as follows:—

1. Piglets born dead.

2. Piglets born alive but very weak. They may lay on their sides, squeal a lot, and show no interest in suckling. The stronger ones show a tendency to burrow and hide under the bedding.

The most obvious symptoms in these piglets in either case are to be seen in the eyes. The eyelids are gummed together with a brown waxlike material and the eyeballs are either bulging, cyst-like or

practically absent. There is often a lot of fluid in the tissues and the abdominal cavity.

3. Piglets may be born normally but with insufficient Vitamin A. These piglets suckle normally and appear to make quick initial growth but are very susceptible to intestinal and respiratory infections. Enteritis with scouring, and pneumonia with coughing are commonly seen.

In some of the piglets in these litters, bone growth around the brain is abnormal and the resulting pressure on the brain causes various nervous symptoms. Before they are very old some of the pigs become paralysed and throw nervous fits. The nervous damage usually becomes more severe until death occurs.

Diagnosis.

When any litters are born dead or weak, a Vitamin A deficiency should be suspected.

Should abnormalities of the eyes be present in the new-born piglets then it is almost certain that Vitamin A is deficient. If litters of young pigs are very susceptible to enteritis and pneumonia, or if paralysis of the hindquarters is often seen in pigs in the piggery then a check should be made to see if there is enough green feed or Vitamin A in the diet. Enteritis, pneumonia and paralysis are not necessarily caused by Vitamin A deficiency.

A common disease causing a similar birth of dead piglets is leptospirosis (red water). In this disease the sow is infected without any obvious symptom being evident until she aborts, which may occur two to four weeks before farrowing is due to take place. If the sow farrows at full time the piglets are born dead or weak.

Diagnosis of this disease necessitates the testing of the blood serum of the sow. This of course is a task for the veterinary pathologist in the laboratory.

TREATMENT AND PREVENTION

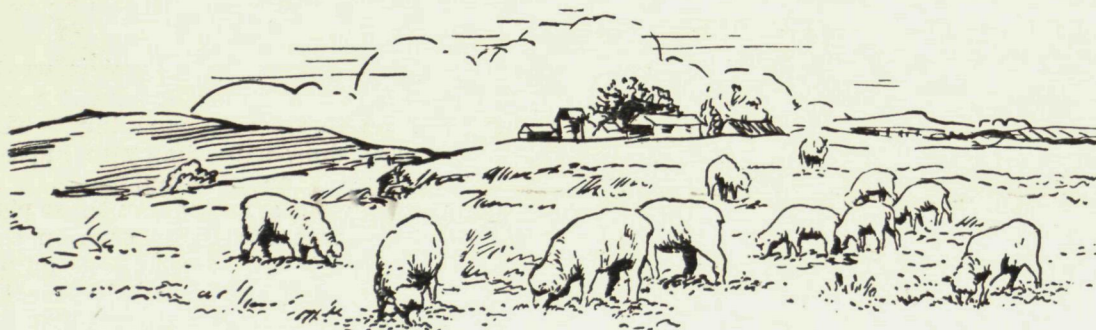
To prevent Vitamin A deficiency occurring, a good quality fresh green feed should be fed daily or a Vitamin A supplement added to the feed. When feeding green feed, about 2 oz. for every pig each day is all that is required. Hay and silage are unreliable sources of Vitamin A as heat and drying destroy the carotene in these feeds.

Whole milk has fairly large amounts of Vitamin A but skim milk is a very poor source as are most milk products, meat-meal and grain (except maize which is very high in carotene).

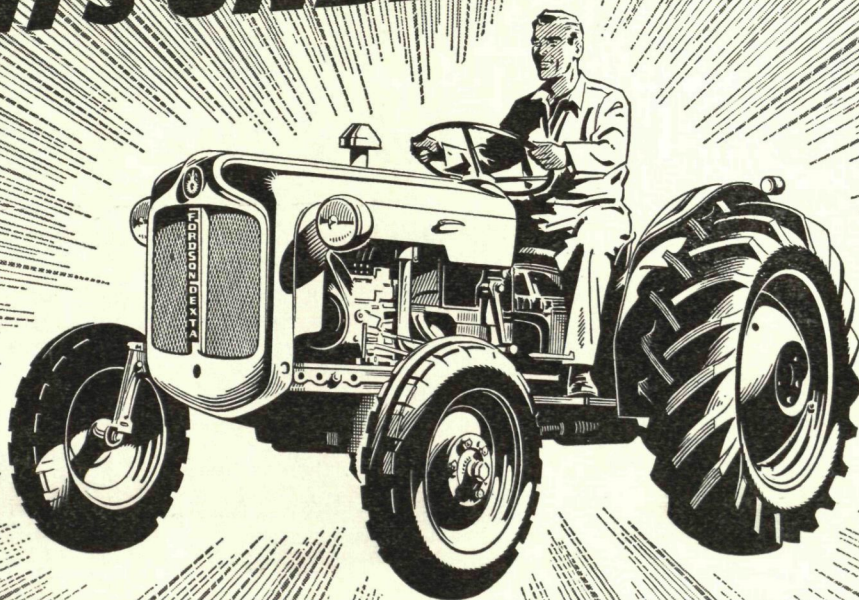
Cod liver oil and fish oils contain large amounts of Vitamin A and can be used as supplements but it is easier and cheaper to use one of the commercial synthetic stabilised Vitamin A supplements. These can be obtained in powder or liquid emulsion form for mixing with the feed and details of the quantities to be fed are supplied with the various preparations.

Many commercial preparations contain Vitamin A together with Vitamin D. The Vitamin D would appear to be of no value to pigs kept in Western Australia unless the pigs are kept so that they obtain no sunlight or perhaps for pigs in the very south of Western Australia during the winter period.

When there are obvious symptoms of Vitamin A deficiency a dose of 100,000 international units of the Vitamin A supplement should be given as a drench.



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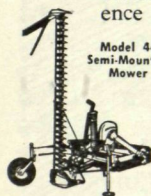
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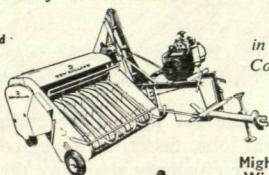
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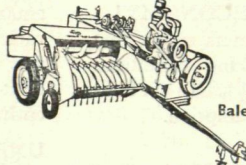


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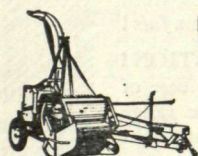


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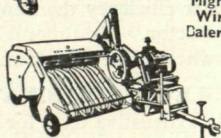
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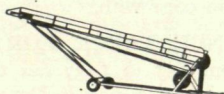
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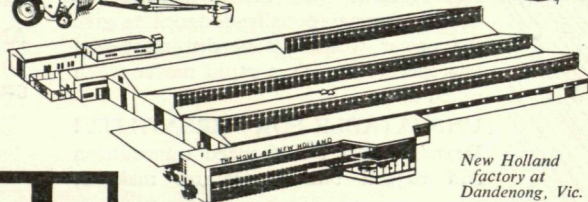
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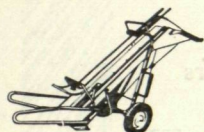
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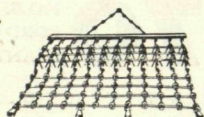
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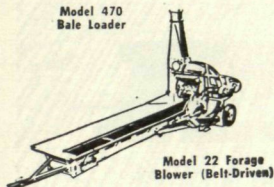
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