General Observations Concerning Additives

All trials reported here were conducted under somewhat ideal conditions. Feeds were always clean and disinfected before pigs went into them. All pigs were from the same background and were approximately the same age and size when they went on test. Pigs were always fed in small groups. Care and management were at a rather high level.

A zero additive or control was not included in any of the above trials. The Armour-system fed group was considered as a control, since Armour has been fed at low levels at this station for a number of years.

Under actual field conditions any of the additives may perform differently. One should not plan to substitute an additive for good management, good sanitation procedures, or good housing. With field conditions where it is virtually impossible to maintain ideal conditions, the proper additive may help improve animal performance. That every additive improves feed costs must be considered when evaluating additive response under any set of conditions.

Dietary NaNO₃, NaCl, K₂SO₄, or urea for Growing-finishing Pigs (Project 241).

R. A. Koch and R. R. Parvis

Nitrates are known to harm animals when ingested under certain conditions. Previous work has indicated that a high level of dietary nitrate might interfere with carotene conversion to vitamin A. This trial attempted to determine whether such interference does exist and also whether other dietary additives might interfere in carotene conversion.

Experimental Procedure

Twenty-four weaning pigs, 12 Parc and 12 three-way-crossbreds, six barrows and six gilts from each breed, were divided into six treatment groups of four pigs each. Each group was further divided so each pen contained one Parc and one crossbred pig and one gilt and one barrow.

The pigs had been vaccinated for cholera and escheculata before going on test. They also had been wormed with liquid pipera. They had access to a heated automatic waterer and a two-hole self-feeder. Each ration was freely mixed and pelleted every two or three weeks. Composition of the rations is listed in Table 18.

Observations

Results are reported here primarily to show that growing-finishing pigs can tolerate rather high levels of these materials without serious effects. None of the additives had an apparent effect on the blood serum vitamin A level. Pigs consuming 4 percent urea in their diet made the highest average daily gain.

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