

Swine Feed Efficiency: Decision Tree

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Break F/G into the two factors: Feed disappearance and ADG and investigate whether the poor F/G is associated with high feed disappearance, low ADG, or both.

High Feed Disappearance

- 1) Low energy density
 - a. Low energy diets will increase feed consumption and reduce ADG
- 2) Feed wastage
 - a. Poor adjustment with pans greater than 50% covered will increase feed wastage
 - b. Old feeders with poor feeder design or inability to adjust will increase wastage
- 3) Genetics
 - a. Lower lean, high feed intake genetics will have poorer F/G
- 4) Feed delivery
 - a. Records of deliveries should be checked to ensure that feed credited to the group was not delivered to another group or not delivered at all
 - b. If two deliveries are noted closely together in a time period that is not feasible, it could be a data entry error
 - c. Review feed budgets to make sure the correct amount of each diet is being fed
- 5) Diet deficient (amino acids)
 - a. Inadequate lysine or other amino acids will often lead to an increase in feed usage and lower ADG to make poorer F/G
- 6) Mortality
 - a. Mortality late in the finishing period can lead to feed disappearance calculations being high for the pigs remaining at the end of the period. However, mortality doesn't greatly impact F/G unless very high
- 7) Effective temperature
 - a. If temperature is too low, pigs will increase their feed intake to maintain body temperature. Because the feed is going towards heat needs and not growth, feed efficiency will become poorer

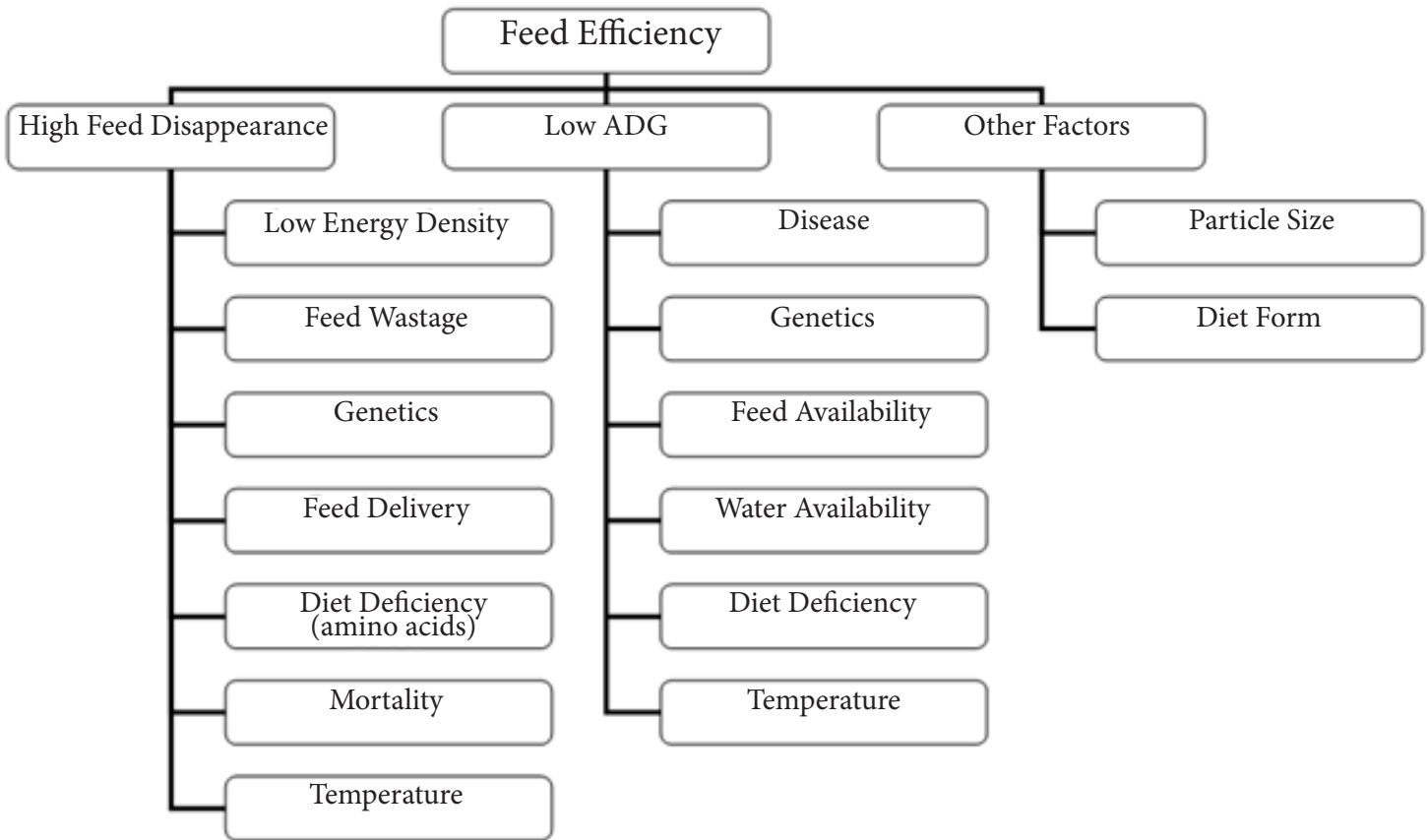
Low Average Daily Gain

- 1) Disease
 - a. Disease problems that lower ADFI will greatly lower ADG. High mortality will increase F/G by about 1.5% for each 1% increase in mortality
- 2) Genetics
 - a. Genetics with low ADFI will usually have lower ADG
- 3) Feed availability
 - a. Limiting feed intake intentionally or unintentionally (plugged or empty feeders or bins) will lower ADFI and ADG
 - b. High stocking density will decrease ADFI and ADG
- 4) Water availability
 - a. Lack of water availability will reduce ADFI and ADG and F/G will get worse
- 5) Diet deficient (amino acids, salt, energy, other)
 - a. Amino acid deficiencies will reduce ADG
 - b. Reducing the energy density of the diet will lower ADG in most on-farm situations
 - c. Diets with inadequate salt levels will greatly reduce ADG
- 6) Effective temperature
 - a. High environmental temperature will decrease ADFI and ADG. Feed efficiency is not altered much by high temperature unless it is so high that feed intake is close to maintenance requirement. Then, F/G will become poorer, there isn't much energy available for ADG because most of it is going towards maintenance requirements

Other Factors

- 1) Particle size of the grain
 - a. High particle size will decrease the digestibility and increase F/G by 1.2% per 100 microns
- 2) Diet form
 - a. Meal will have higher feed efficiency than pelleted diets

Guide to Troubleshooting Feed Efficiency



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