



Anolyte application in pig farming

Research and our practical experience both have revealed that anolyte is perfectly suitable for substitution antibiotics, other chemical and synthetic pharmaceutical during all hygiene and sanitation procedures in pig farming, watering piglets, treatment of diarrhoea and other diseases. Thus money is saved with weight gain increases by ~5-10 %, feed input reduces by ~15 %, expenditure on pharmaceutical reduces. Mortality rate of piglets reduces by ~40-50 %, expenditure on pharmaceutical and deomaterials –by ~50-70 %.

Potential areas where anolyte can be used in pig farming operations are as follows:

-drinking water disinfection by dosing anolyte. Start with 5.0 litres per 1000 litres. **If the** livestock are doing well you can reduce by 1.0 litre per week down to a minimum of 1.0 litre per 1000.

If you suspect **Salmonella** increase dosing of ANK-Anolyte in to the drinking water. Use seven litres ANK-Anolyte for one thousand litres source water. Continue for two days. Then reduce to five litres.



-udder and skin treatment of the sows to prevent diarrhea and other diseases of the piglets;





-fogging of the barns for disinfection and diseases prevention. We advise to start doing fogging twice a week. Use barn temperature ANK-Anolyte. **Use ANK-Anolyte undiluted or 50%**. Use two to three liters of ANK-Anolyte per 100 cubic meter of barn. After four weeks reduce fogging to once per week. After another four weeks reduce fogging to every second week. Fogging is very important. It kills all the bacteria in the barn and ensures healthy livestock;



-cleaning/disinfection of premises and replacement of the toxic chemicals. Disinfect the barn with ANK before new arrivals. Use 300 ml per square metre or so.



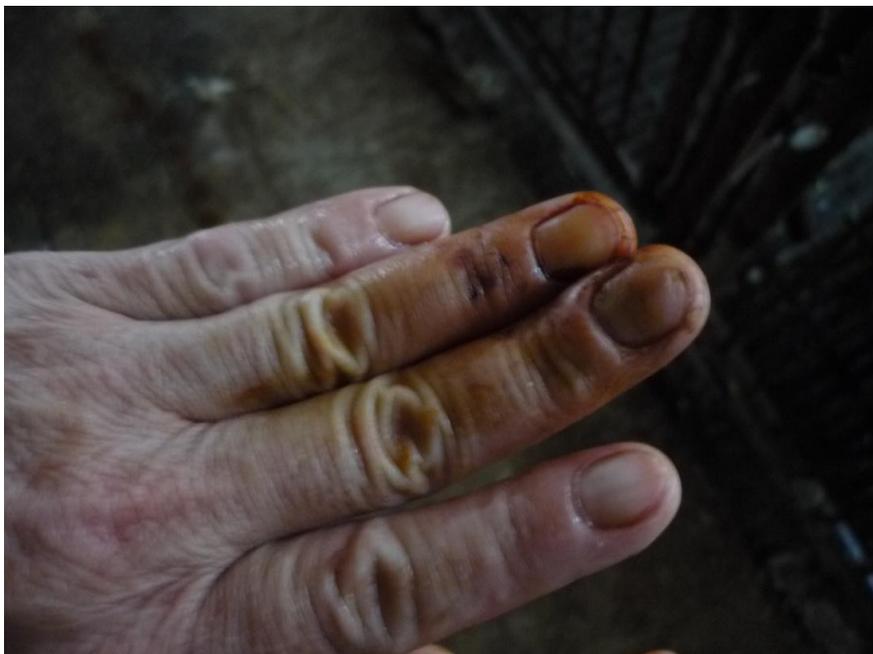
-diarrhea treatment of the piglets. With acute diarrhoea we mix 3 litres ANK with 3-litres water and give it the piglets to drink. One time should be enough for diarrhoea to disappear the next day. Repeat the same procedure in case diarrhoea persists.



-feed disinfection. Anolyte treatment allows the feed to be preserved for 5-7 hours. This makes possible to reduce the workload of barn operator by reducing feed container cleaning from twice a day to once a day, ultimately, results in saving feed. Dry and liquid feed disinfecting is done by spraying/adding of 40-60 litre of anolyte per 1 ton of fodder.



-replacement of the costly chemicals, i.e $KMnO_4$, for wound treatment and during tails cutting. New born piglets must have their tails cut. Two types of equipment are used in tail cutting. One is electrical heating scissors, which cut and disinfect the wound by using iron scissors heated to very high temperature. The other equipment is dental operation scissors which operated in room temperature and the wound is disinfected by $KMnO_4$. The mutual advantage of these two ways is that both will burn the blood vessels around cut surface and stop bleeding. But it is very inconvenient to operate and it is quite easy for the operator to get injuries (hands/skin burned by heat or chemicals) during the operation in a short/long term. Operators often complain about the pain caused by $KMnO_4$ burning on her skin. Especially while they have wounds on the hands, it could be too painful for them to complete the work properly and effectively. In the treatment conducted.



Anolyte replaces $KMnO_4$ to disinfect the wound in tail cutting using dental scissors. The scissors were immersed in pure anolyte for 3 – 5 seconds between two operations. Before cutting, the tail and the skin around were disinfected by spraying pure anolyte onto the surface. After cutting, the wound is treated by spraying pure anolyte for 2-3 seconds. The

wound is cured on the next day and no bacterial infection was detected as shown on the picture below. Feedback from the operators is good. They acknowledge and appreciate the convenience and safety of using Anolyte to replace $KMnO_4$ in tail cutting operation.



- Castration Wound Treatment. Anolyte treatment is also applied in castration wound treatment by simply spraying pure anolyte on the operation surface throughout the process. Anolyte treatment makes the disinfection and wound healing simple and effective. No bacterial infection to the wound was yet detected on the second day. The healing progress is fast and trouble less.



-Womb Treatment of Sows: After giving birth to piglets, the sows continue breast feed to piglets for 45 days, and then the sows are allowed to rest for 7 days. 52 days in total after giving birth, the sows enter a second cycle of pig production. Due to this intensive production, more than 10% of sows have different types of womb diseases, which slow down the production rate and reduce the efficiency of the farm operation. Current treatment of womb is to injecting Penicillin solution into womb for washing. This costs USD 2,4 per pig per complete treatment (production cost of anolyte is USD 0,03 per L), but cure is not yet 100% guaranteed. A good cure of womb diseases must be:

1. Effectively healing the disease;
2. Will not have impact on the womb functionality and will not degrade the pregnancy rate. Anolyte is used to replace Penicillin solution to treat sows womb after 7 – 10 days of giving birth. 200-250 mL of pure anolyte was injected in to the sick sows' womb.



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