Swine dysentery (SD) can persist for many years in big pig units with their own reproduction. On such infected farms incidence of SD, lower weight gain and excessive mortality can be kept within economically acceptable limits only with permanent prophylactic and/or therapeutic medication.

Immunization confers partial protection against infection with primary etiological agent of SD, *Trepornema hydysenteriae* (Glöckle et al. 1976). The population is the safest method for the eradication of the disease but is economically unfeasible for big populations. Thus, the only acceptable method, although risky, that could be used on big farms is a long term treatment of the whole herd combined with the destruction of *T. hydysenteriae* in the immediate environment of pigs.

Our first attempt to eradicate SD on the reproductive and fattening pig unit producing 10,000 slaughter pigs per year failed in 1978 (Jane et al., 1980). The second eradication program was launched on the same farm in 1980.

Before the initiation of the second eradication program minimal inhibitory and minimal bactericidal concentrations were determined for strains of *T. hydysenteriae* isolated from swine with acute SD six months after the first attempt of eradication failed. Clinical effectiveness of randazole (5 mg/1 kg body weight) was tested on pigs sick with SD on the farm and in a controlled experiment in the isolation unit. Methods used for isolation of *T. hydysenteriae* and in sensitivity studies were described by Kydon et al., 1976. Some of the procedures used during the eradication (Jane et al., 1980) were modified as follows:

- All 51 batches of medicated feed-stuffs used during the eradication program were quantitatively analysed for nitroimidazoles at the Veterinary Institute, Zagreb.
- The whole infected population was fed medicated diet containing randazole (5 mg of active substance per 1 kg body weight) for 48 to 46 successive days.
- Slaughter pigs were fed nonmedicated feeds for 5 days before slaughter.
- Suckling piglets and weaners were fed medicated feeds for 10 additional days.
- Pigs sick with SD were treated with 10% water solution of randazole (5mg/kg body weight). Suckling piglets younger than 15 days at the end of the eradication were treated in the same way as sick pigs for 4 successive days.
- Losses due to SD were calculated by comparing the cost of treatment, feeding, and housing of pigs before the eradication of the disease to the expenses after the eradication.

The results of in vitro and in vivo sensitivity studies indicated that sensitivity of *T. hydysenteriae* to randazole was not considerably changed during the first mass treatment with this drug nor was 6 months later. This data were estimated as a sound basis for the second eradication program on the same farm with the same drug.