

## Parasite Research

In 2002 cooperators evaluated naturally-derived treatments for parasites in sheep and in pigs. **Frances Zacharakis-Jutz** carried out sheep trials on the Solon farm where she lives with her parents Jeff and Susan. Frances also worked with **Walt Ebert**, Plainfield, on a third trial in sheep. The lone swine trial was the work of Tom and Irene Frantzen, New Hampton, with special participation by their son James.

The two alternative wormers evaluated in 2002 were pumpkin seeds and a relative of the weed lambsquarters called *Chenopodium ambrosioides*. These two plant materials have been used by livestock farmers historically. Each of the four trials was designed and carried out somewhat differently.

The first trial by Frances Zacharakis-Jutz (**Figure 2**) compared: 1) pumpkin seeds; 2) *Chenopodium*; 3) the synthetic wormer Valbasin; and 4) a control group that received no medicine. Fecal samples were taken from each group on day



Figure 2, in her first 2002 trial, Frances Zacharakis-Jutz compared two botanical treatments and a synthetic wormer to the control treatment. The trial was terminated early.

zero, before any treatments were given. On day 10, the two botanical treatments showed elevated levels of parasite ova (eggs) in feces, but they both had far fewer than the control group, whose numbers went through the roof. The Zacharakis-Jutz family was so concerned about the high numbers that they terminated the trial.

Later in the summer they tried again. This time the synthetic wormer was ivermectin, and there was no control group included (**Figure 3**). Without an untreated group of animals for comparison, it is hard to judge the effectiveness of the other treatments. Yes, ivermectin reduced ova counts, but did the herbal treatments have any effect at all?

Two other things are evident in both this trial and the one by Walt Ebert (**Figure 4**). First, there was great variation among the different groups on day zero, before any treatments were imposed. There shouldn't have been two- and three-fold differences among groups that were supposed to be alike at the start of the trials. This suggests that the groups were too small or that the sampling method didn't give a good indication of the true parasite load.

The other suggestion from these two late summer trials is that by the end of the experiment, parasite pressure was cooling off no matter what the treatment was. Drier August weather may have lowered the viability of parasite ova, and the growing lambs may have gained some natural resistance by the end of the two trials.

And what about the **Tom and Irene Frantzen** trial with pigs? Unlike the sheep trials, in which whole pumpkin seeds and fresh *Chenopodium* plants were used, the trial with pigs utilized the extracted oil of the *Chenopodium* plant. The oil was mixed in a gruel along with castor oil at 4 ml per 100 lbs of body weight. Again, the day zero counts differed greatly between the *Chenopodium* group and the control (**Figure 5**). After that, you could imagine that the *Chenopodium* was doing its job - if you could ignore day 15. The spike in ova numbers on that date was due to a single type



Suzan Jutz described the sheep and goat operations at the 2001 field day

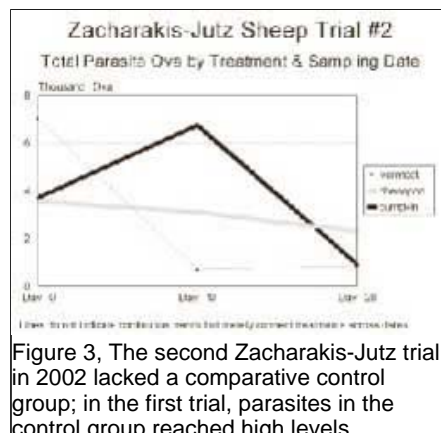


Figure 3, The second Zacharakis-Jutz trial in 2002 lacked a comparative control group; in the first trial, parasites in the control group reached high levels.

of parasite; the other species counts remained at low levels. If you have the creepy feeling that you're not sure what is real here, you aren't the only one.

In true PFI fashion, these cooperators have not admitted defeat. If more *Chenopodium* can be obtained, they want to repeat several of the experiments, but this time with tighter control of conditions and data collection. Individual animal weights and fecal samples will be obtained. This will not only allow a firmer verdict on these alternative treatments, it will indicate to us whether this kind of research can be successful on farms.

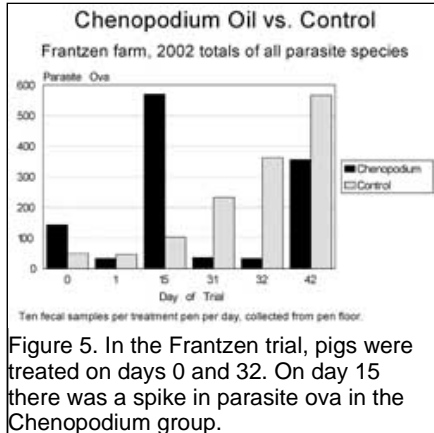


Figure 5. In the Frantzen trial, pigs were treated on days 0 and 32. On day 15 there was a spike in parasite ova in the *Chenopodium* group.

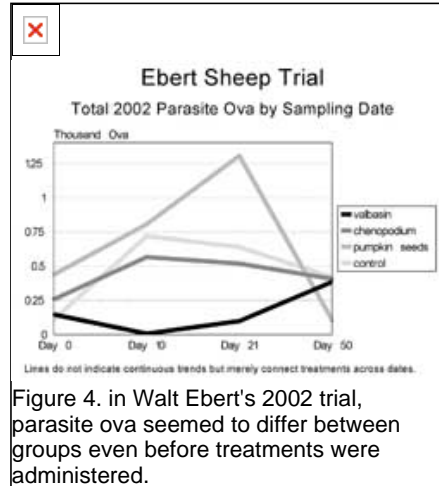


Figure 4. in Walt Ebert's 2002 trial, parasite ova seemed to differ between groups even before treatments were administered.