ABSTRACT OF EXHIBIT
TAIWAIN INTERNATIONAL SCIENCE FAIR

CATEGORY: Zoology
TITLE: Preventing Deer Tag Infections
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COUNTRY: New Zealand

Farmers in many countries are legally required to identify livestock with some sort of tagging system. Tagging is required for ownership, breeding and as a means of tracking livestock during a disease outbreak.
New Zealand farmers are required to fit all livestock with two ear tags (one in each ear). Ear tags are applied in a similar way to the piercing of human ears. The two tags are of different sizes and are known as the primary and the secondary tags. The primary tag is physically bigger than the secondary tag.
We farm deer and have noticed that after tagging some deer develop ear infections at the site of tagging.
A randomized controlled trial was undertaken in 105 fawns to test the hypotheses:

- Pre treatment of the ear tag with liquid iodine will reduce post tagging infection.
- A reduction in ear infections as a result of tagging will lead to more rapid weight gain.

The treatment group had iodine applied to the sharp part of both primary and secondary tags immediately prior to tagging of the fawns. The control group was tagged in the usual fashion. Fawns were then assessed for infection at 6 and 11 weeks after tagging. Each ear was individually graded for infection and recorded against the number of the animal. Grading was on a scale of 0-3: zero having no infection; 1-slight redness; 2-a larger ring of redness and possibly some dried blood; 3-as for grade 2 plus swelling of the ear around the pin.

Results

At 6 weeks the mean infection score of the treated group was 0.75 and was 17% less than the control group score of 0.88, this was just significant at the 95 % confidence level.
At 11 weeks there were no significant differences in infection scores between the treatment and control groups.
When size of tag was considered, (irrespective of treatment groups), big tags had significantly higher mean infection scores at both 6 and 11 weeks than the small tags. The big tag mean score in week 6 was 0.58 compared with the small tag score of 0.23. In week 11 the big tags had a mean infection score of 0.84, compared with the small tags' score of 0.08. These results were all highly significant at the 99 % confidence level.
The weights of the treatment and control groups were not significantly different at both 6 and 11 weeks.

Conclusions

Pre treatment of tags with iodine had no impact on weight gain.
Iodine had a weak effect in reducing ear infection in tagged deer.
Tag size was the most important factor influencing post tagging infection.
Mechanical factors may be responsible for a significant proportion of infection in tagged stock.