

Effectiveness of an herbal remedy compared to control or traditional therapy in dry off treatments

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Introduction

Dry cow therapy at the end of lactation is aimed at eliminating current and preventing future intramammary (imm) bacterial infections. Dry cow therapy conventionally uses antibiotics. Certified organic dairies are restricted from antibiotic use and thus must use an alternative or no dry cow therapy. Here we used 150 Holstein, Jersey, and crossbred cattle to compare an herbal treatment (Phyto-Mast, imm, Penn Dutch Cow Care, Narvon, PA) to conventional treatment (Quartermaster, imm + Orbeseal, internal teat sealant, Pfizer Animal Health) or no dry cow therapy.

Objective

To compare the efficacy of three different dry off treatments by evaluating (1) milk production, (2) somatic cell score (SCS) and (3) milk microbiology for all animals in the study.



Materials and Methods

Holstein, Jersey, and crossbred cattle were assigned to three treatments of 40 cows and 10 heifers each, balanced by breed, age, and due date.

Milk production and SCS:

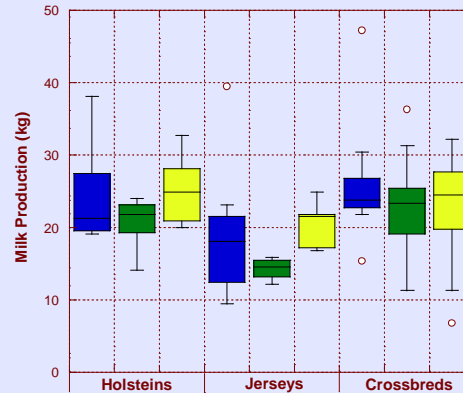
- Obtained from Dairy Herd Improvement Association (DHIA) monthly tests
- Used last test before dry off and first test postpartum
- Analyzed using SAS statistical software (Cary, NC) MIXED procedure for effects of treatment on production and SCS

Milk microbiology:

- Duplicate quarter samples were aseptically collected immediately before treatment and three days postpartum
- Samples were assessed at the Mastitis and Milk Microbiology Laboratory in the College of Veterinary Medicine
- Culture results were analyzed by comparing presence of bacteria in pre- and post-treatment samples
- Differences between treatments were analyzed using the SAS LOGISTIC procedure

Results

First Test Date Milk Production by Treatment and Breed

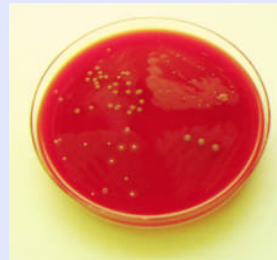


C: ■ Conventional N: ■ No treatment P: ■ Phyto-Mast

Treatment did not significantly affect ($p > 0.05$) subsequent milk production for cows or heifers.



Swollen right rear quarter, indicative of mastitis



Culture plate with significant growth in all four quarters

First test date SCS averages by treatment and group (mean ± std. error)

Treatment	Cows	Heifers
Conventional	1.9 ± 1.1, n = 18	2.9 ± 1.5, n = 4
None	2.2 ± 1.6, n = 17	3.7 ± 0.9, n = 6
Phyto-Mast	2.2 ± 1.4, n = 18	4.1 ± 2.2, n = 6

Treatment did not significantly affect SCS for cows or heifers ($p > 0.05$).

	Treatment		
	None	Phyto-Mast	Conventional
Cure: bacteria present pre-treatment not present post-calving	14/30 = 47% ^a	11/27 = 41% ^a	28/41 = 68% ^b
New bacteria present post-calving: number of quarters with ≥1 new bacteria	37/75 = 49% ^a	26/75 = 35% ^b	12/75 = 16% ^c

^{a,b,c}values with different superscripts (within a row) differ significantly ($p < 0.05$)



Holstein, Jersey and crossbred cattle at Cherry Research Farm

Summary

- No significant differences were observed among treatments in first postpartum test day milk production or SCS.
- Conventional treatment had a higher cure rate and a lower new infection rate.
- When compared to no treatment, Phyto-Mast had fewer new infections during the dry period.

Conclusion

Cows treated with the herbal preparation, Phyto-Mast, at dry off had fewer new infections than no treatment. Conventional antibiotic therapy is effective, but not an option for certified organic dairies. Although not as effective as conventional antibiotic therapy, Phyto-Mast could be a potentially useful dry treatment for organically certified dairies currently not using dry therapy.

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