

Brief Communication

THE EFFECT OF A POST-MILKING TEAT DIP ON THE
IODINE CONCENTRATION OF BULK HERD MILK*

In connection with studies on the iodine supplementation of livestock in Sweden, analyses of the total iodine concentration in milk have been made continuously at our laboratory during the last four years (*Nyberg 1970, Iwarsson et al. 1972, Ekman & Iwarsson 1973*). Starting in 1970 an increased number of milk samples from individual cows as well as from bulk herd milk showed fairly high levels (more than 300 µg/l) of total iodine and were recorded as "contaminated". There seemed to be a correlation between these findings and the increased use of iodophors as post-milking disinfectant teat dips.

In collaboration with a company selling a teat dip preparation, Ewodip®, which is predominant on the Swedish market, a number of field trials have been performed. The aim of the investigation reported here was to study the influence of routine post-milking teat dipping with Ewodip® on the iodine content of bulk herd milk.

The iodophor preparation used, Ewodip®, contained 1.6 % available iodine and a non-ionic surfactant in acidic solution (Danish Patent No. 116086). It was supplied by Astra-Ewos AB, Södertälje, Sweden. One part of the preparation with two parts of tap water added gave the solution used for dipping (approx. 0.5 % available iodine).

From 14 dairy herds with a number of lactating cows ranging from 14 to 34 (mean 21), samples of bulk herd milk from the tanks at the farms were collected every second day during four weeks. The first two weeks constituted a control period during which no iodine disinfectants were in use. Thereafter treatment with Ewodip® was introduced and maintained during two weeks. Teat dipping was performed after routine morning

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Table 1. Total iodine concentration of bulk herd milk before and during post-milking teat dipping with Ewodip®. Mean value, standard error of the mean, range and the increase of the concentration ($\mu\text{g/l}$) for each herd are given.

Herd no.	Number of lactating cows	Total iodine concentration ($\mu\text{g/l}$)						
		control period			experimental period			increase
		m.	s.e.m.	range	m.	s.e.m.	range	
1	34	171	7	149—200	363	21	290—450	192
2	20	39	2	33—45	392	29	285—495	353
3	27	100	4	86—116	235	9	205—245	135
4	19	57	3	46—67	320	23	195—380	263
5	22	152	5	130—168	275	13	235—310	123
6	17	19	2	14—28	74	11	41—100	55
7	16	61	2	50—65	374	15	300—410	313
8	14	130	25	56—235	327	24	310—445	197
9	21	68	12	36—109	233	7	210—245	165
10	16	20	2	15—27	177	14	138—240	157
11	20	72	17	42—159	135	21	73—210	63
12	14	35	12	10—88	158	8	121—184	123
13	30	16	1	13—22	207	11	148—230	191
14	18	105	11	71—150	344	13	310—395	239
All herds								184 (range 55—353)

and evening milking in accordance with the instructions for use of Ewodip®. The treatment was done by the ordinary staff of the different dairy herds.

Total iodine concentration in milk was determined in an Auto-Analyser (Technicon Instruments Corp., Tarrytown, New York, USA).

The mean concentration of total iodine in the 14 herds during the control period varied between 16 and 171 $\mu\text{g/l}$ (Table 1). The magnitude of the range is due mainly to varying iodine supplementation in the herds. During the period of post-milking teat dipping the iodine concentration increased on average by 184 $\mu\text{g/l}$ (range 55—353). The wide range of the increase, especially pronounced in comparison between certain herds, should be noted. It is most probably due to variation in performance of the treatment by individual milkmen in spite of identical instructions.

With another iodophor preparation (Iosan® CCT, Ciba-Geigy AG, Basel, Switzerland) *Stöckl & Weiser* (1968) observed no significant effect on the iodine content of milk when using this

iodophor as post-milking udder and teat disinfectant. Their study was made on 10 cows and with another sampling technique, so that their results are not directly comparable with those of the present investigation. In fact preliminary results from a field study in Sweden with the same preparation* indicate an increase of iodine in milk also with this iodophor.

If teat dipping with an iodophor disinfectant such as Ewo-dip® becomes common, there will be a considerable increase of the iodine content in dairy milk. This in turn will cause an increase of the iodine intake of the milk-consuming population in the country.

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* "Iobac® CCT", offered for sale by Ciba-Geigy AB, Norrköping, Sweden.