

COBALT-EDTA RECIPE
Updated September 2013

I. Reference:

Uden et al. 1980. J. Sci. Food Agr. 31:625

II. Personal Protective Equipment:

- A. Lab coat
- B. Safety glasses/goggles
- C. Designated peroxide handling gloves

III. Procedure:

- A. Weight the following into a 2 L beaker
 - 1. 25.0 g Co (II) acetate $C_2H_4O_2 \cdot 4H_2O$
 - 2. 29.2 g EDTA
 - 3. 4.3 g Lithium Hydroxide ($LiOH \cdot H_2O$)
- B. Add 200 ml dH_2O and dissolve with heating if necessary
- C. Cool and add 20 ml 30% H_2O_2
- D. Allow to stand for 2-3 hours at room temperature (or overnight)
- E. Add 300 ml 95% (v/v) EtOH and store overnight at 4°C
- F. Filter (fast, qualitative) and wash with 80% (v/v) EtOH
- G. Let excess EtOH evaporate and dry at 60°C.
- H. Yield: 20-25 g $LiCo-EDTA \cdot 3 H_2O$ (MW: 408.2)

IV. Dosing:

- A. Dissolve 50 g $LiCo-EDTA \cdot 3 H_2O$ in 400 ml H_2O (filter if necessary)
 - 1. Sheep – 20 to 50 ml
 - 2. Cattle – 100 to 200 ml

V. Analysis:

- A. Freeze and thaw sample
- B. Centrifuge @ 30,000 X g for 15 minutes in 50 ml centrifuge tubes
- C. Dilute if necessary. (0-10 $\mu g/ml$)

VI. Standards:

- A. **Stock** - ~1000 $\mu g/ml$ Co
- B. **Working** – 0, 2, 4, 6 and 8 $\mu g/ml$ in ddH_2O

STD	ml stock	Final Volume
0	0.0	100
2	0.2	100
4	0.4	100
6	0.6	100
8	0.8	100
10	1.0	100