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## Chronic hypocalcaemia due to continuous feeding of seed cover of field beans (Mochai or Hyacinth)

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**Abstract**

Hyacinth bean is commonly cultivated in the slope of hilly region in Tamilnadu. Seed cover is being used to feed cattle, sheep and goat. Although the seed is a good protein source, seed cover is having tannin as anti-nutritive. When the cow was fed with seed cover of hyacinth for nearly one month period of time tannin content in the seed cover chelated calcium ions available in the feed to the cows thereby reduced blood serum calcium ion concentration to 2.8mg%. The clinical symptoms observed were anorexia, constipation, lack of rumination or rumen motility, for the past one month. Restlessness, tremors, ear twitching, head bobbing, mild ataxia, Limping and reluctant to walk were observed. Cow dung was pellet with shinning mucous cover. Animal was emaciated; Ribs, scapula and pelvic bony prominence were clearly protruding through the skin. Recorded rectal temperature was 37°C. 500 ml of Calcium Borogluconate (Mifex) was infused through intravenous route. Immediately after treatment recoveries were noticed in gait and rumination. Animal started taking feed at the spot itself. Owner was advised to withdraw the Hyacinth seed cover from the ration. After one week of therapy, the cow was completely recovered from other clinical signs.

**Keywords:** Chronic hypocalcaemia due to continuous feeding seed cover of field beans

### 1. Introduction

Hypocalcaemia usually occurs during, pre and post-partum period and peak lactation period in dairy cows due to excessive use of calcium ions for the growth of foetus, milk yield or deficient production of calcitonin and parathyroid in the body. Anti nutritive factor or calcium chelating agent in the feed may leads to mal-absorption of calcium ions that result in hypocalcaemia. But documented reports of hypocalcaemia due to dietary origin are in vague. So in this present case, chronic hypocalcaemia due to continuous feeding of seed cover of field beans and its successful recovery by treatment is being discussed here.

Field bean is a general term for several plants found growing within fields or shrubbery and may refer to *Lablab purpureus* (the hyacinth bean), *Phaseolus vulgaris* (the string bean) and *Vicia faba* (the broad bean). Hyacinth bean is commonly cultivated in the slope of hilly region in Tamilnadu. It is widely cultivated in Theni district and sometimes whole vegetable is cooked in boiled water and consumed after removal of seed cover. But mostly consumed by public as wet seed or dry seed after removal of seed cover before cooking; seed cover is being used to feed cattle, sheep and goat. Although the seed is a good protein source, seed cover is having tannin as anti-nutritive factor which is consumed by ruminant animals.

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A non-pregnant dry cow brought to the veterinary dispensary for treatment of anorexia and emaciation. The clinical symptoms observed were anorexia, constipation, lack of rumination or rumen motility, for the past one month. Restlessness, tremors, ear twitching, head bobbing and mild ataxia were observed. Cow dung was pellet and mucous covering gave the shining surface to the pellets. Animal was emaciated. Ribs, scapula and pelvic bony prominence were clearly visible and protruding through the skin. Vohra *et al.*, (1966) [6] also observed lowered growth rate in tannin fed broilers. Recorded rectal temperature was 37 °C which is subnormal to dairy cows. Limping and reluctant to walk were frequently observed by the owner in recent days. Similarly Ibnouf *et al.*, (1992) [3] also observed leg abnormalities because of calcium deficiency in tannin diet fed group. In Blood serum examination revealed that serum calcium ion concentration was 2.8mg%. All the observed symptoms as given above and blood serum calcium concentration were coincidence with the earlier reports of different authors. (Ibnouf *et al.*, 1992; Vohra *et al.*, 1966) [3, 6] for calcium deficiency.



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Tannin content in the seed cover had chelated calcium ions available in the feed to the cows. Similarly Hassan *et al.* (2003) [2] and Ming-Cheng *et al.* (1994) [4] also observed that tannin in the feed also affect calcium absorption in the intestine in broiler chicks and rats respectively. Mohamed *et al.* (2001) [5] also reported that tannin inclusion in the diet of rabbit leads to mal-absorption of all minerals and there by mineral deficiency symptoms developed including calcium deficiency. Since the farmer had practised feeding the seed cover continuously for one month period of time, the calcium ions present in the feed was not availed to the cow continuously. So hypocalcaemia became chronic. 500 ml of Calcium Borogluconate (Mifex) was infused through intravenous route. Immediately after treatment recoveries were noticed in gait and rumination. Animal started taking feed at the spot itself. Owner was advised to withdraw the Hyacinth seed cover from the ration. After one week of therapy, the cow was completely recovered from other clinical signs.

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