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**Lantana and Hagonoy:
Poisonous weeds prominent in
rangeland and grassland areas**

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Foreword

Sudden animal deaths have been reported by ranchers and livestock smallholders, particularly on ruminants (cattle, carabao and goat).

These normally happen during the dry season when there is scarcity of forage grasses and legumes. Veterinarians and animal health officers have diagnosed that the intake of certain poisonous weeds is the most common cause of the animals' sudden death.

This issue primarily aims to inform the livestock holders how these two species affect livestock raising specially in the countryside. We hope that with the correct information, they will be guided in properly managing the grasslands where ruminants graze.



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Introduction

Livestock raising, particularly on ruminants (cattle, carabao and goat), is one of the many promising resources wherein some of our countrymen can generate income to support their family needs. In this endeavor, the most concerned sectors are the ranchers and the subsistent farm families/backyard raisers in the countryside.

Backyard ruminant management can be made simple. However, there were many reported cases of sudden animal deaths. Such reports were done during the dry season, when forage grasses and legumes are scarce and weeds are dominating the grassland resource. Common suspicion among the authorities boils down to the probable intake of poisonous weeds.

Livestock mortality or losses due to plant poisoning, result in income depletion or capital loss. Therefore, knowledge about these poisonous plant species could guide ruminant raisers in protecting their animals to avoid such losses. The two prominent poisonous species are *Lantana camara* and *Chromolaena odorata*. These species tend to dominate the grassland/rangeland during the dry season when there is scarcity of feedstuffs.

LANTANA

Toxic components

Lantana plant parts have terpenoid constituents, or pentacyclic triterpenes, called lantadenes (A & B), which are hepatogenic photosensitizers (Frohne and Pfander, 1983; Leeuwenberg, 1987 and Kinghorn, 1979). These chemicals are concentrated in the leaves and in unripe and ripe fruits.

- 1. Common name:** Lantana
- 2. Local name:** Bangbangsit (Ilocos); Bahubaho (Iloilo); Lantana (Tagalog)
- 3. Scientific name:** *Lantana camara* L.
- 4. Family:** Verbenaceae/Compositae

5. Description

Lantana or bahu-baho (Fig. 1) is a small thorny flowering shrub with square stems. It is an angiosperm with rings of sepal encircling clusters of eight or more tubular flowers.

It can grow to a maximum height of 6 ft and may spread 8 ft across the ground.

It has an erect or subscandent, square-sectioned, prickly stem. Its young leaves are usually pale in color, while older ones are darker such as red or orange. The leaves are ovate, coarsely serrated and deeply veined, measuring 5-12.7 cm x 2.5 cm rounded tooth edges and a textured surface.

Inflorescence: The small flowers are arranged in dense flat-topped heads and held in clusters (called umbles), typically 2.4-5.1 cm in diameter. Lantana is a

non-stop bloomer. Color of flowers ranges from white to yellow, orange to red, pink to rose in unlimited combinations, usually changes in color as they age.

Fruit : an ovoid drupe 4-6 mm in diameter, on a thickened, freshly receptable, colored green initially, but turning black or purple at maturity.

Seed : 2-seeded, a nutlet, about 1.5 mm long.

Propagation : by seeds and cuttings/rooting from the lower branches.

Habitat : Found in perennial crops and pastures. Lantana grows well in dry areas because it prefers well drained soil and it can tolerate drought. It can tolerate both humid and dry heat but cannot live below 28°F. The species is capable of surviving mild fires regeneration from the basal shoots. It is a perennial plant, and grows back every year and requires low maintenance (Moody *et al* 1984).

6. Distribution

Lantana is an invasive plant that originated in Central and South America. However, a few species are native to Africa and Asia.

7. Effects on livestock after grazing on lantana

1. Liver dysfunction due to photosensitization (accumulation of phyloerythrin) which causes photosensitivity. Animals become extremely sensitive to sunlight after eating the plant. This can cause a variety of problems from redness and itching of the pigmented areas of the skin to severe necrosis. Affected animals may die from starvation or other secondary effects.
2. Jaundice (Frohne and Pfander, 1983)
3. Constipation
4. Accumulation of bile
5. Enlargement of the gall bladder
6. Renal damage
7. Gastroenteritis (Kingham 1979)
8. Loss of appetite, dehydration jaundice

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HAGONOY

Toxic components and effects

1. Nitrate, per se, is not toxic. Its conversion into nitrite within the alimentary tract makes it lethal. Nitrite converts haemoglobin into metahaemoglobin which cannot act as oxygen carrier. At a sufficient level of metahaemoglobin, animals may die of tissue, and young leaves shoots (Pancho and Plucknet 1971 and Waterhous 1994).
2. Hepatotoxic pyrrolizidine alkaloids (Gatmaitan 1977)
3. Echinatine, intermedine and rinderine are pyrrolizidine alkaloids that cause liver toxicity.

1. **Common name:** Hagonoy

2. **Local name:** Hagonoy (Cebu); Agonoy (Iloilo); damong Imelda (Tagalog)

3. **Scientific name:** *Chromolaena odorata* (L.) R.M. King & H. Robinson

4. **Family:** Asteraceae (Compositae)

5. Description

It is an erect, hairy perennial shrub, which is 1-3 m high (Fig. 2). The leaves emit a pungent smell when crushed.

Stem : many opposite, spreading branches.

Leaves : opposite, petiolate, ovate-deltoid to acuminate, 6-12 cm x 3-7 cm, dark green often purple when young, conspicuously three-veined.

Inflorescence : taxillary or terminal clusters of 10-13 flowers, subtended by 5-6 whorls of involucre bracts up to 1 cm long, straw-colored to greenish; corolla 5-lobed with protruding two-branched stigma; florets light blue to white.

Fruit : a one-seeded acheme. oblong, about 5 mm long, with hairy to hairless ribs topped with persistent whitish awns.

Propagation : by seed

Habitat : mainly found in pastures, rangelands and in newly established plantation crops (Moody *et al* 1984).

6. Distribution

C. odorata is a weed that can be found throughout Southeast Asia, Iran, Java, Papua New Guinea, New Britain, Mariana and Caroline Is., Southern China, Taiwan, Sri Lanka, Bangladesh, India, West, Central and South Africa (Waterhouse, 1994).

7. Effects on livestock after grazing on hagonoy

1. Loss of appetite
2. Diarrhea/Scouring
3. Death due to tissue anoxenia (a condition characterized by deprivation of oxygen at the tissue level)

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