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Remark on Cut-Flower Residue Misuse: The Case of Anano Village, Adami Tullu Jido Kombolcha Woreda, Ethiopia

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Abstract

It is believed that cut flower industries use more than 201 types of chemicals to control pests and diseases. About 500 tons of residues per hectare per year are generated from a flower farm. These residues are mainly contaminated unwanted leaf and stem which are disposed of in various ways. The cross-sectional study was performed to assess the cut flower residue use in Adami Tullu and Jido Kombolcha Woreda in May 2019. Data was collected through field observation and interviews. The inhabitants of the Anano village reported that they are using untreated cut flower residues to feed cattle due to scarcity of food, especially during the dry season. And they perceive that it will fatten the cattle and have no side effect. The concerned official should give special focus to solve cattle's food security problem of the village and create awareness about its possible adverse effect of such practice.

Keywords: Control pests; Floriculture; Pesticides; Organochlorine; Organophosphate; Pyrethroid compounds

Introduction

Floriculture is susceptible to pests, weed attacks, and fungal diseases [1]. To control pests and diseases, pesticides (insecticides, fungicides, nematicides, herbicides, growth regulators) are being applied in cut flower industries. According to Tilahun [2] & MoA [3] between 2007 and 2014, flower farms in Ethiopia have imported 96 types of insecticides and nematicides and 105 types of fungicides [4]. Besides, some pesticides that entered the flower industry are found on the WHO negative pesticide list and prohibited/unknown on the European Union Pesticide Database [5].

Cattles can be exposed to pesticides through the water as well as when contaminated feedstuffs like cut flower residues are fed to them. The cut flower residue is unwanted leafs and stems removed from flower farms. It is estimated that up to 500 tons of residues per hectare per year are generated from flower farms. Among these, more than 30% of cut flower farm industries dispose of this green waste (cut flower residue) open field carelessly [2]. Such practice will increase the chance of contaminants to reach the food chain through cattle when it will be utilized as feedstuff.

A wide range of organic and inorganic compounds may occur in feedstuffs, including pesticides and heavy metals. Pesticides that may contaminate feeds originate from most of the major groups, including organochlorine, organophosphate, and pyrethroid compounds. Although pesticides are potentially toxic to farm livestock, the primary focus of concern centers on residues in animal products destined for human consumption [6]. Plants grown in farms where pesticides are applied may thus become contaminated and consequently, pesticide residues are transferred to milk when these plants are fed to cows [7]. Several studies in tropical areas showed positive milk samples [8].

Pesticides can cause many types of harmful effects. It can cause acute effects such as nerve, skin, and eye irritation and damage, headaches, dizziness, nausea, fatigue, vomiting, abdominal pain, and systemic poisoning. Major acute effects can cause respiratory problems, nervous system disorders, and aggravation of pre-existing conditions such as asthma [9]. It can also cause chronic effects like brain cancer, breast cancer, leukemia, non-Hodgkin lymphoma, mutagenic effects, teratogenic effect, prostate cancer, liver damage, reproductive disorder, damage to hormone-producing glands, neurotoxicity, Alzheimer disease, Parkinson disease, multiple chemical sensitivity [1,6].

Hence, in this note, the authors have tried to communicate the malpractice of cut flower residue use as feedstuff in Anano Village.

Anano Village is one of Adami Tullu Jido Kombolcha Woreda villages in the Oromia Region of Ethiopia. It is found 170Km South East of Addis Ababa [10]. Most of this woreda ranges in altitude from 1500 to 2300 meters above sea level. A survey of the land in this woreda shows that 27.2% is arable or cultivable, 21.6% pasture, 9.9% forest, 15.7% swampy, and the remaining 25.6% is considered degraded or otherwise unusable [11]. Consequently, livestock feed shortage is common in the woreda [12].

The Anano village residents use flower farm residue to feed their cattle as an alternative feedstuff especially when scarcity of feedstuff happens (Figure 1). It is becoming common to see when cattle are eating flower residue of the cut flower industries in the village. The residents reported that they had encountered scarcity of feedstuff to feed their cattle especially in dry seasons, when most fields are bared for grazing. Consequently, the inhabitants are forced to use cut flower residue which they get it by purchase. Even this harmful flower waste is not affordable for most farmers to buy. The residents added that the flower farm they are buying smells like a dead body. This may be an indication of chemically contaminated wastes. The residents of the village were asked if the use of cut flower residue as feedstuff has solved their problem. Accordingly, they have replied that the feedstuff has helped them to sustain the life of their cattle. Furthermore, the users of the cut flower residue reported that they have no awareness if their practice can harm cattle and human health in the long term.

Figure 1: A picture showing cattle feeding on cut-flower residue feedstuff. (Picture was taken by the Author on May 30, 2019),

It is a good idea to use waste as a resource. However, regardless of lack of food to feed cattle during the dry season, chemical contamination of flowers remaining should be in consideration. Unlike other agricultural residues, cut flower residue has a high chance of being contaminated with various highly harmful chemicals. Despite it has solved temporary cattle feeds scarcity in the village, the bioaccumulation potential and the long term effect of the practice should get equal attention. The practice increases the chance of toxic chemicals used in flower farming to enter the food chain through those cattle.

Conclusion

This short communication is basically aimed to share information for a broad reader and let them play their part in enforcing safe cut flower residue management. It is not difficult for experts and higher officials to understand the possible health risk of using cut flower residue to feed cattle. In this study, it was tried to transfer information of cut flower residue usage as cattle feedstuff especially in dry seasons. Such practice may cost the life of either cattle or human being who depends on them for food. The author recommends that the use of cut flower residue to feed cattle is not recommended as it facilitates the bioaccumulation of toxic chemicals. Hence, the government should take immediate action to reduce the possible exposure of cattle and human being to chemicals especially, pesticides.

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