PERFORMANCE AND YIELD OF SEVERAL SWEET CORN VARIETIES SUITABLE FOR ANIMAL FEED

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4. Enhanced Research Title and Objectives

Original Title as Proposed:
Nutrient evaluation on several varieties of feed corn

Improved/Enhanced Title:
Performance and yield of several sweet corn varieties suitable for animal feed

Original Objectives as Proposed:

Improved/Enhanced Objectives:

5.2 Enhanced Executive Summary

Abstract

Maize is an essential source of multi-nutrients plant used as supplement in rudimentary livestock diets. However, until now there is no specific maize variety that has been adopted for that purpose in Malaysia. This situation could result in reduced efficiency in livestock industry as the low nutrient content in animal diet could impede animal growth and meat production. This study focus on analyzing several maize varieties micro and macronutrient content by using ICPMS (Inductively coupled plasma mass spectrometry) to screen the best maize variety that contain acceptable level of nutritive value suitable to be use in animal feed. All method and samples analyzed using ICPMS were done at Agriculture Chemical Analysis Laboratory (D10),Mardi Serdang. Regarding maize plantation plot, experiment was conducted in UiTM Perlis Farm where the maize varieties were planted in one large plot (approximately 0.4 hectare) consisting 7-8 rows of maize. The maize was planted in large plots with common agronomy practices (as practice by UiTM Perlis Farm's Unit). Result of the study has shown that corn variety A (Taiwan) has approximately 11.77% crude protein, 4745.52 cal/gm gross energy, 8.52% crude fiber and 1.88% N. As for maize variety B (Korea), the crude protein is 10.87%, gross energy 4786.08 cal/gm, 11.66% crude fiber and 1.74% N. Both corn varieties consist different percentage of major and trace elements such as Al, Ca, Cu, Fe, K, Mg, Na, P, S and Zn which is beneficial to livestock diet. From study, maize variety A (Taiwan) shows extra advantage relatively compared to maize variety B (Korea). Maize A shows higher percentage of CP, DM and several trace minerals, which is important for animal. Maize B show higher percantage on several fiber component such as ADF, lignin and NDF which help in digestion for animal. It also shows that sweet corn varieties as used in this study have a complete set of nutrients that suitable for not only human but also for animal feed (livestock). During December, which have high rainfall (avetage >220 mm) and low temperature (average 28 ℃ and >90% RH),corn planting areas might be affected by fungus (mildrew), heavy rain can cause fertilizer drain to unwanted area and not suitable to start planting corn and other crops.

5.3   Introduction

Animal feed is any foodstuff that is used specifically to feed domesticated livestock such as cattle, sheep, horses and others. Usually most animal feed is from plants and some can be from animal origin.

A modern hybrid corn nowadays out yield conventional cultivars and respond better to fertilizer. Hybrid sweet corn also commonly need for human consumption. Modern hybrid sweet corn has incorporated multiple gene types such as *sy* (synergistic) adds the *sh2* gene to some kernels on the same cob as a *se* base (homozygous or heterozygous). Another is *augmented sh2* ads the *se* (sugary enhanced, Everlasting Heritage) and *su* (normal sugary) gene to a *sh2* (shrunken 2) parent.

Animal which is livestock requires a complete set of nutrients in order to grow well. Basic nutrient content are crude fiber, protein, energy and others. Due to increasingly reduce area for open release, a cage method is widely practice recently and the source of nutrient content has becoming a great issue in animal husbandry. This cage method is good to conduct growth monitoring, feeding and security as well as health checkup.

However, the optimum source of nutrient has to be ready where maize/corn is one of the good alternative sources under investigation. Corn usually used as supplementary in rudimentary animal diets. In this study, several sweet corn variety will be analyze to see the contain of appropriate level of protein content and nutritive value that suitable for animal feed. There is a potential to know a good variety of sweet corn that contains high protein for ruminant feeding. Last but not least, this study also touch on information sharing in weather suitability that may affect the feed corn planting/ harvesting in UiTM Perlis area for a given period of time.

Objectives of this study are to identify the most suitable sweet corn varieties that can be use animal feed based on nutrient analysis. The second objective is to analyze weather suitability for corn planting in UiTM Perlis.