

Corn Use as Livestock Feed in Iowa

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Summary and Implications

Historically, feeding livestock has been a major use of corn in Iowa, a major corn growing state. Recently corn-based ethanol plants have become a major user of Iowa corn. Competition for corn has increased. Questions about the amount of corn fed to Iowa livestock have been raised. The objective of this study was to estimate the amount of corn fed to livestock in Iowa.

Current livestock production numbers for Iowa were multiplied by probable corn consumption per head of livestock to generate corn usage by species values. The corn consumption for livestock was based on ISU Extension budgets.

The total amount of corn fed to livestock in Iowa was estimated at 607 million bushels (Table 1). According to Iowa Agricultural Statistics the total bushels of corn produced in Iowa in 2006 was 2 billion bushels. Therefore, Iowa livestock consumed about 30% of the 2006 corn crop. Iowa finishing pigs were the largest class of livestock consuming corn, approximately 340 million bushels, which is about 16.6% of the Iowa corn crop, or 55% of all the corn fed to livestock in Iowa. If sows and litters are included, corn feeding for swine in Iowa is about 370 million bushels or 18% of the Iowa corn crop, or 60% of all corn fed to Iowa livestock. In short, Iowa pigs consume 1 of every 5 or 6 bushels of corn produced in Iowa and consume more corn than all other Iowa livestock feeding combined.

Based on these calculations, in 2006 about 70% of the Iowa crop was not fed to Iowa livestock, rather it was exported out of the state, processed into ethanol, corn sweetener, or other products such as pet food or other miscellaneous uses. This analysis shows that there is ample Iowa corn to feed Iowa livestock.

Introduction

Historically, feeding livestock has been a major use of corn in Iowa, a major corn growing state. Recently corn-based ethanol plants have become a major user of Iowa corn. Competition for corn has increased. Questions about the amount of corn fed to Iowa livestock have been raised. The objective of this study was to estimate the amount of corn fed to livestock in Iowa.

Materials and Methods

Corn feed use estimates by livestock species were not available, therefore current livestock production numbers

for Iowa were multiplied by probable corn consumption per head of livestock to generate corn usage by species values (Table 1). The corn consumption for livestock was based on ISU Extension budgets.

Some adjustments of corn use were made. Corn use for grain-fed cattle marketed was increased by 10 bu/head to offset the distiller's grains used in the ISU budget. Corn use for beef cows and heifers includes the corn used to develop replacement heifers. Corn use for cattle that died was estimated as half of the average corn use for grain-fed cattle plus corn use for beef cows. Similarly, corn use for milk cows and heifers includes the corn to develop replacement heifers. Corn silage use was converted to corn grain equivalent and included in corn feeding values. Corn use for hogs marketed and hogs slaughtered on farm was increased to 10.3 bu/head. This increase accounts for DDGS feeding and heavier market weights. Corn use for hog deaths was estimated as half the amount of corn per marketed hog. Corn use for litters farrowed includes feed for sows, breeding boars, pigs until feeder pig weight, and replacement gilts on a per litter basis. Corn use for poultry (layers and turkeys) was estimated in consultation with K. Bregendahl, poultry nutritionist, Iowa State University. Corn use by all other livestock (horses, goats, ratites, other poultry, etc.) was estimated as 5% of the total.

Results and Discussion

The total amount of corn fed to livestock in Iowa was estimated at 607 million bushels (Table 1). According to Iowa Agricultural Statistics the total bushels of corn produced in Iowa in 2006 was 2 billion bushels. Therefore, Iowa livestock consumed about 30% of the 2006 corn crop. Iowa finishing pigs were the largest class of livestock consuming corn, approximately 340 million bushels (the sum of the values for corn use for hogs marketed, hogs slaughtered on-farm and hogs that died), which is about 16.6% of the Iowa corn crop, or 55% of all the corn fed to livestock in Iowa. If sows and litters are included, corn feeding for swine in Iowa is about 370 million bushels or 18% of the Iowa corn crop, or 60% of all corn fed to Iowa livestock. In short, Iowa pigs consume 1 of every 5 or 6 bushels of corn produced in Iowa and consume more corn than all other Iowa livestock feeding combined.

Based on these calculations, in 2006 about 70% of the Iowa crop was not fed to Iowa livestock, rather it was exported out of the state, processed into ethanol, corn sweetener, or other products such as pet food or other miscellaneous uses. Iowa corn is commonly exported from the state to feed livestock in other regions of the U.S., e.g., pigs in North Carolina, broilers in Georgia or Arkansas, beef cattle in the High Plains, etc. This analysis shows that there is ample Iowa corn to feed Iowa livestock.

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Table 1. Livestock produced, corn fed per head, and total corn fed by livestock category in Iowa.^{1,2}

Livestock category	Livestock produced, (hd)	Corn fed/head of livestock, (bu)	Total corn fed, (bu)
Grain-fed cattle marketed	1,328,000	60.00	79,680,000
Beef cows and heifers	3,800,000	4.00	15,200,000
Cattle on-farm slaughter	4,000	60.00	240,000
Cattle deaths ³	180,000	16.00	2,880,000
Milk cows and heifers	210,000	168.00	35,280,000
Pigs marketed ⁴	32,900,000	10.30	338,870,000
Pigs on-farm slaughter	11,000	10.30	113,300
Pig deaths ⁵	2,070,000	5.15	10,660,500
Swine litters farrowed ⁶	1,855,000	17.10	31,720,500
Lambs marketed	252,000	5.20	1,310,400
Lambs on-farm slaughter	1,000	5.20	5,200
Breeding sheep	170,000	4.80	816,000
Layers (all chickens)	58,455,000	0.86	50,271,300
Turkeys	8,200,000	1.31	10,742,000
Subtotal			<u>577,789,200</u>
All other livestock ⁷			<u>28,889,460</u>
Estimated total corn fed to livestock in Iowa			<u>606,678,660</u>

¹All values from Iowa Agricultural Statistics, 2007 for 2006 and ISU Livestock Budgets FM-1815 for 2007, except poultry corn use which was per K. Bregendahl, ISU, 2/07/08.

²Distiller's grains and corn silage fed to cattle were converted to corn equivalencies.

³Half of corn fed to marketed cattle plus corn fed to beef cows.

⁴Corn fed increased to take into account for DDGS feeding and heavier market weights.

⁵Half of corn fed for a market pig.

⁶Swine litters farrowed include breeding swine corn feeding.

⁷All other livestock corn feeding estimated as 5% of subtotal.