

IOWA STATE UNIVERSITY

Dashboarding USDA Commodities with Tableau

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Objective

The primary goal of this project is to explore agricultural commodity data provided by the United States Department of Agriculture (USDA) and develop a set of visualizations using Tableau which can be ordered into online dashboards.

Motivation

The Community and Economic Development group from Iowa State Extension currently provides commodity reports on their website. These reports are in the PDF file format and generated via PHP script using pre-cleaned data hosted on a local database.

CED's client, the Agricultural Marketing Resource Center (AgMRC) has expressed interest in updating the existing reports to interactive dashboards as opposed to the static and flat PDF reports. Our project aims to produce several dashboards modelled on the original reports, but with dynamic data and interactive maps and charts.



Current AgMRC Commodity Report

Data & Methodology

Our primary data source is the USDA National Agricultural Statistics Service (NASS). A web interface allows users to individually select crops, date ranges, locations, and a wide variety of product-specific indicators. The USDA also allows this data to be accessed via a publicly-accessible API; we have found several R libraries devoted to this API, the most convenient being tidyUSDA.



After downloading the data we import it into Tableau to create our visualizations. Tableau offers a wide variety of charts, plots and mapping options. Most of our work in this regard was exploratory in nature as we attempted to learn about our assigned commodities and brainstorm interesting way to visualize this agricultural data.

Challenges

During this semester long project, we encountered a number of difficulties:

- Learning the Tableau software
- Inconsistent attributes between commodities
- Lack of familiarity with agricultural data
- Incomplete Data

Results

Each team member was assigned two commodities and was responsible for producing two individual dashboards for their assigned product. We have produced a variety of visual styles and layouts for the consideration of our CED and AgMRC stakeholders.

<https://prod-useast-b.online.tableau.com/#/site/issueoced/home>

