



# Livestock Feed Quality Database: An Open-Access Platform for Feed and Forage Nutritional Data

Kanika Singh<sup>a</sup>, Gayathri Kandukuri<sup>b</sup>, and Ram Dhulipala<sup>a</sup>

<sup>a</sup>International Livestock Research Institute, Nairobi, Kenya

<sup>b</sup>Crea2Sol Private Limited, Hyderabad, India

## INFO

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## EXECUTIVE SUMMARY

The Livestock Feed Quality Database is an open-access digital platform designed to organize, validate, and share reliable information on the nutritional quality of livestock feeds and forages. It enables users to search, filter, and compare standardized feed data across regions, supporting informed decision-making for research, extension, and livestock development. The platform follows a role-based access structure to balance openness with data quality, allowing public access to approved data while ensuring robust validation through managed submission and review workflows. By combining accessibility, data governance, and usability, the database strengthens evidence-based livestock feeding practices and supports sustainable agricultural systems.

## Introduction and Purpose

The Livestock Feed Quality Database is an open-access digital platform developed to make reliable livestock feed and forage quality information easily available to a wide range of users.

The platform brings together nutritional quality data from different regions and sources into a single, structured system that can be searched, filtered, and explored without technical expertise.

By presenting standardized feed quality data in a transparent and accessible manner, the database supports evidence-based decision-making for livestock feeding, research, and policy development.

The system is designed to serve researchers, nutritionists, extension professionals, development practitioners, and other stakeholders who require trustworthy feed quality information for comparison, analysis, and planning.

## User Roles and Access Levels

To ensure both openness and data quality, the platform follows a role-based access structure.

### No Login User (Public User)

- Public users can access the database without logging in, making approved feed information widely accessible.

- They can browse, search, and view nutritional values, variable descriptions, and informational pages.
- However, public users cannot submit data, export datasets, access dashboards, or view request-related features. (Figure 1)

### Manager

- Managers have oversight responsibility for the database and play a key role in maintaining data quality and system integrity.
- They can view all submitted feed data, monitor submission and verification status, review system errors, and approve or reject feed data submissions.
- While Managers oversee operations and validation, they do not perform full system administration, ensuring a clear separation between governance and technical control. (Figure 2)

### General User

- General Users contribute data and actively engage with the database without administrative authority.
- They can upload feed data using standardized templates, view approved feed information, and track the status of their own submissions.
- This role supports collaborative data contribution while maintaining strong quality control through Manager review. (Figure 3)

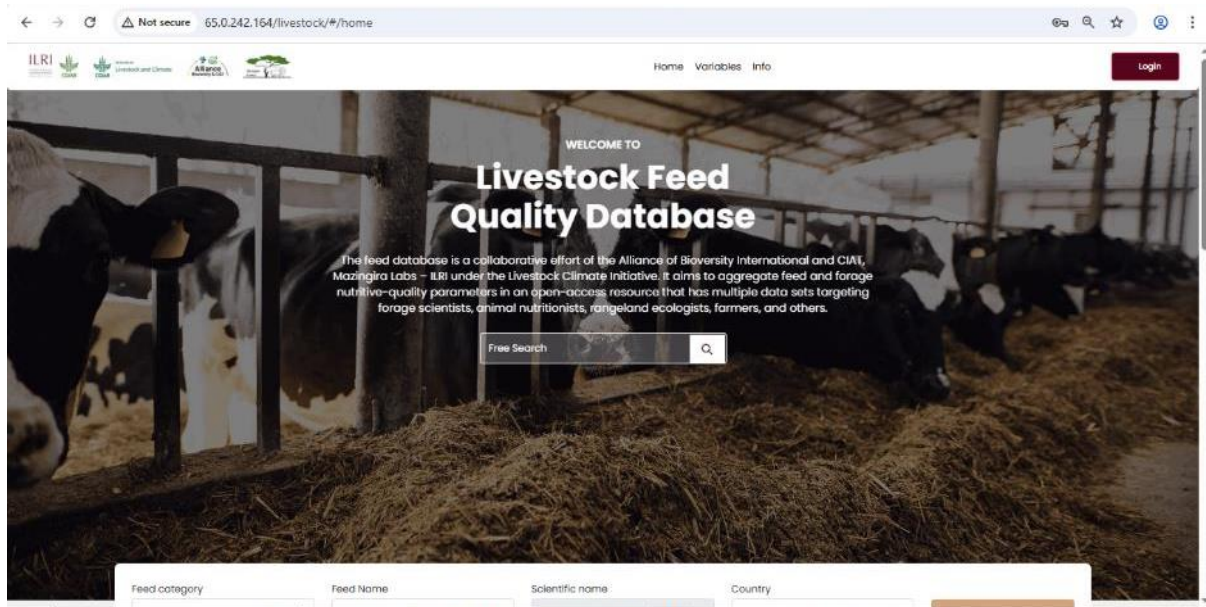


Figure 1

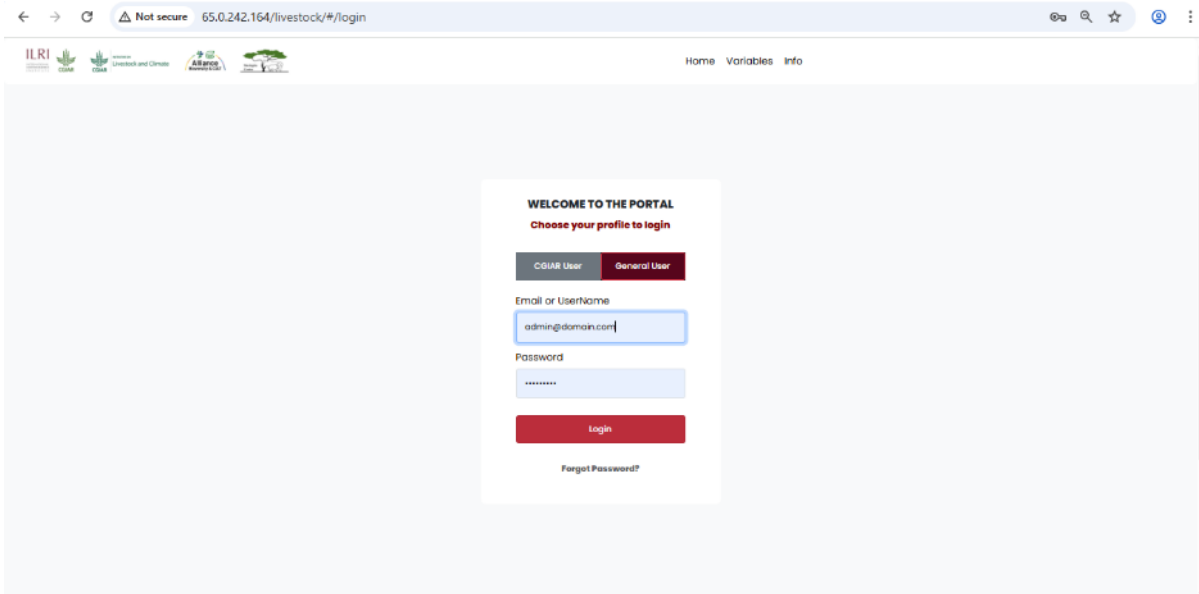


Figure 2

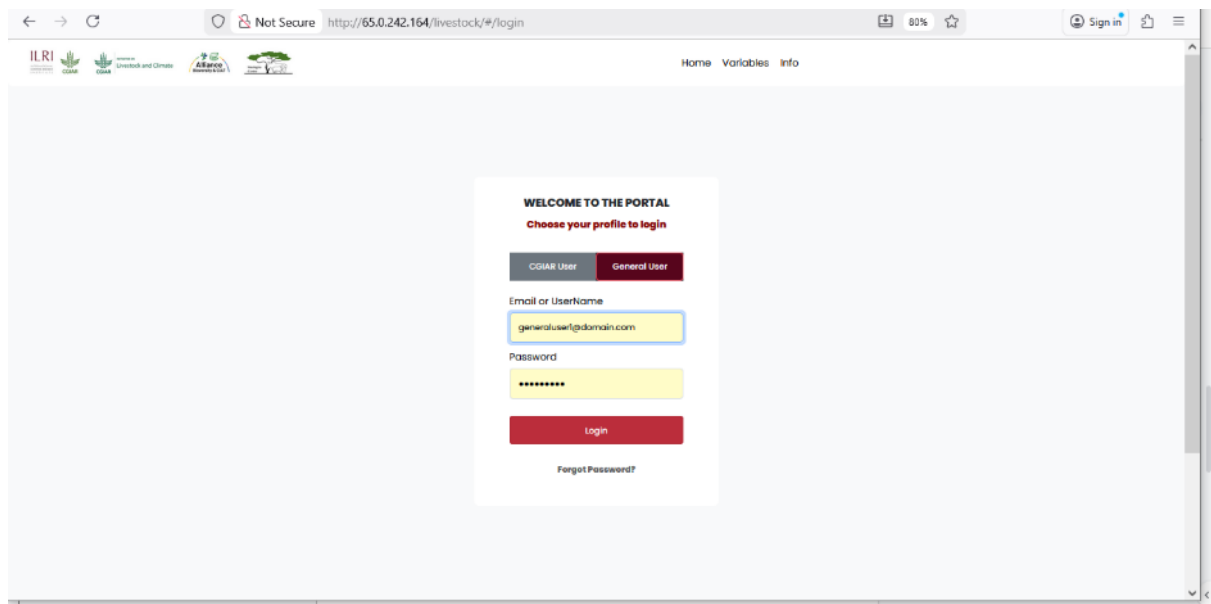


Figure 3

## Home Page and Data Exploration

The Home Page serves as the main entry point for all users. (Figure 4 & 5)

- It provides a clear overview of the database and allows users to explore approved feed data in a read-only format.

- Multiple discovery options are available, including free search, filters, feed cards, and category-based navigation.
- This design ensures that even first-time users can quickly locate relevant feed information without technical knowledge.

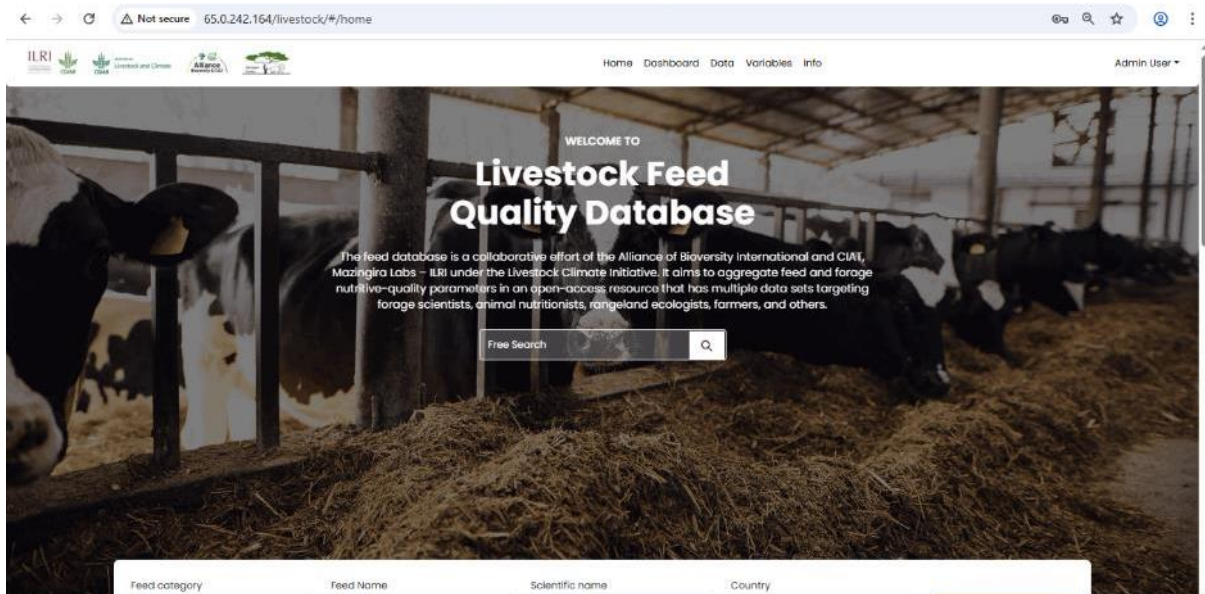


Figure 4

## Free Search

- Users can search for feeds by entering keywords related to feed names or feed types. (Figure 5)
- Matching results are displayed instantly, allowing users to select and view detailed nutritional information. (Figure 6)

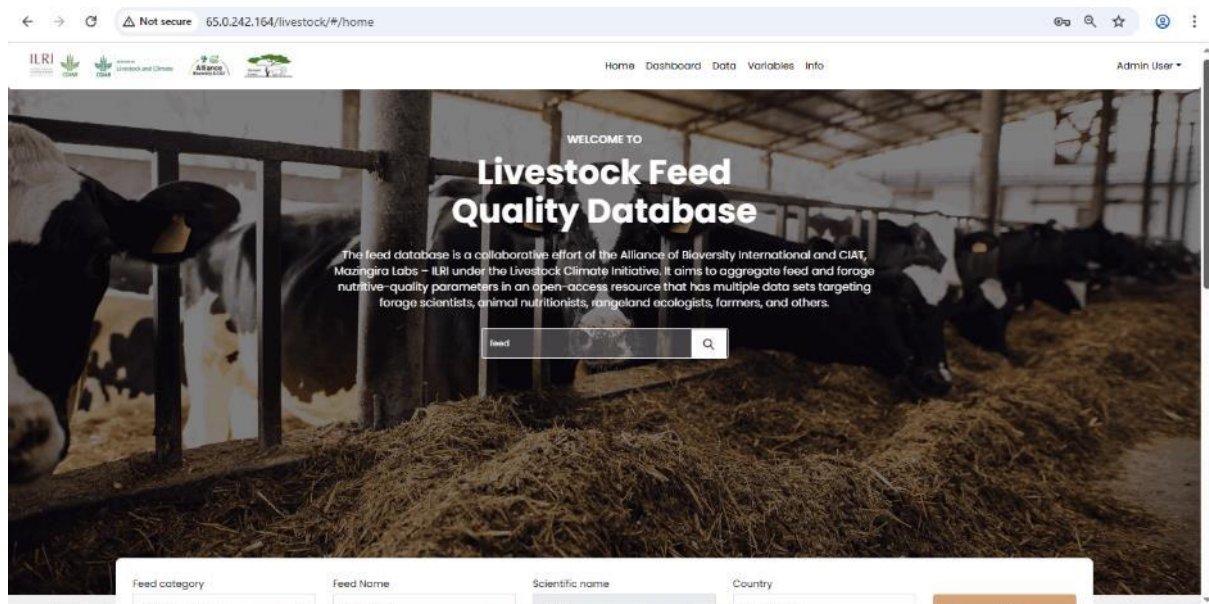


Figure 5

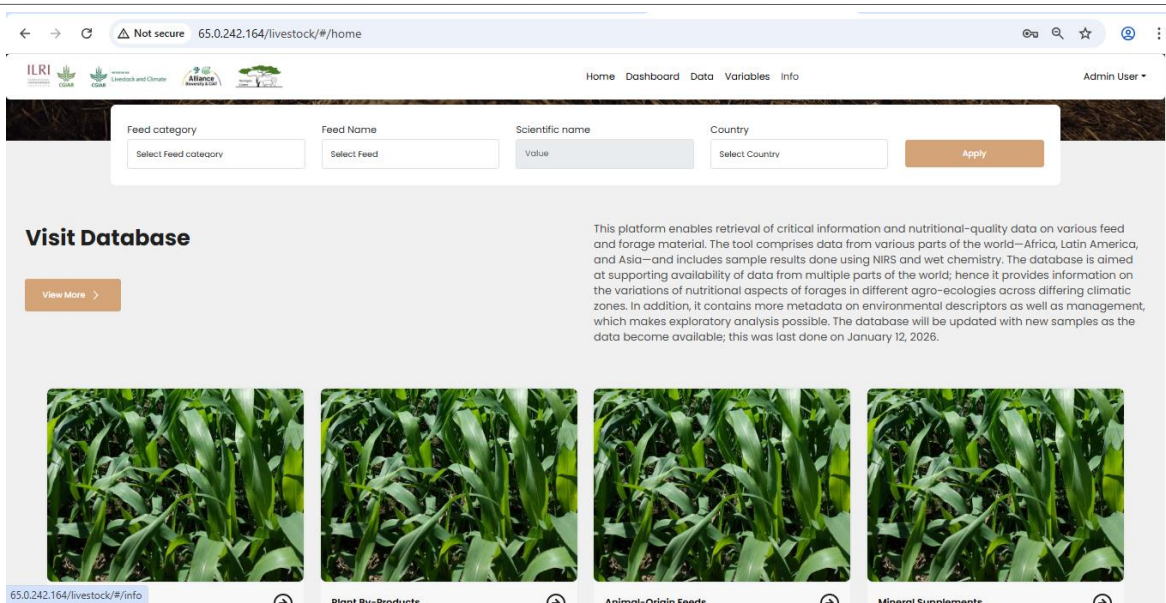


Figure 6

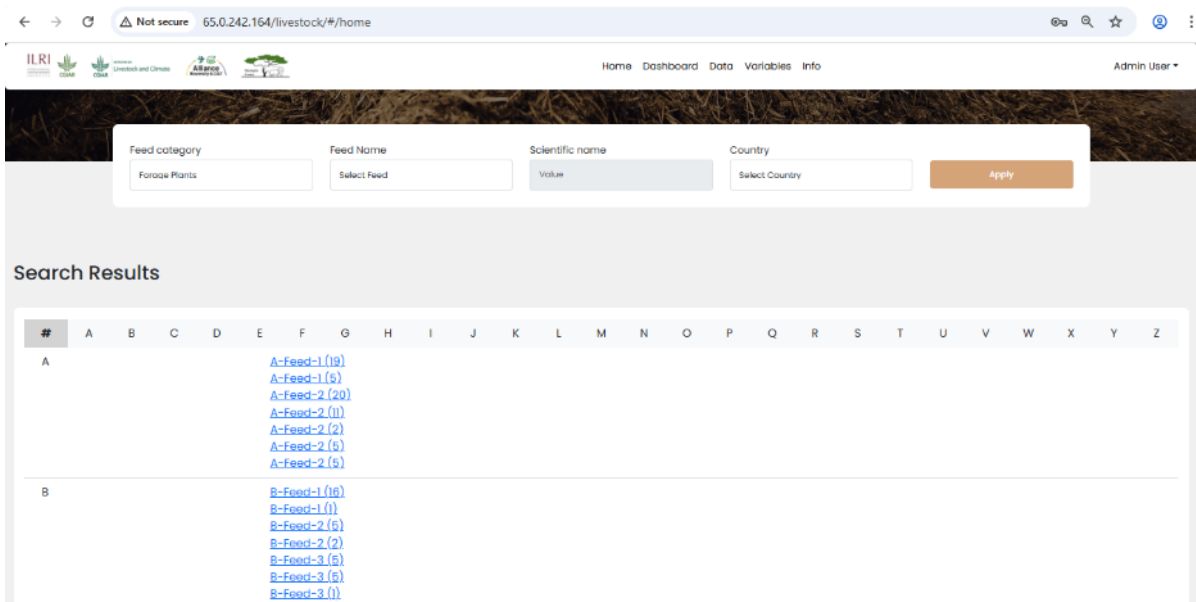


Figure 7

**Filters**

- Filters allow users to narrow down feed data based on feed type, specific feed name, and country. (Figure 7)
- This feature helps users quickly locate region- and feed-specific information relevant to their context. (Figure 8).

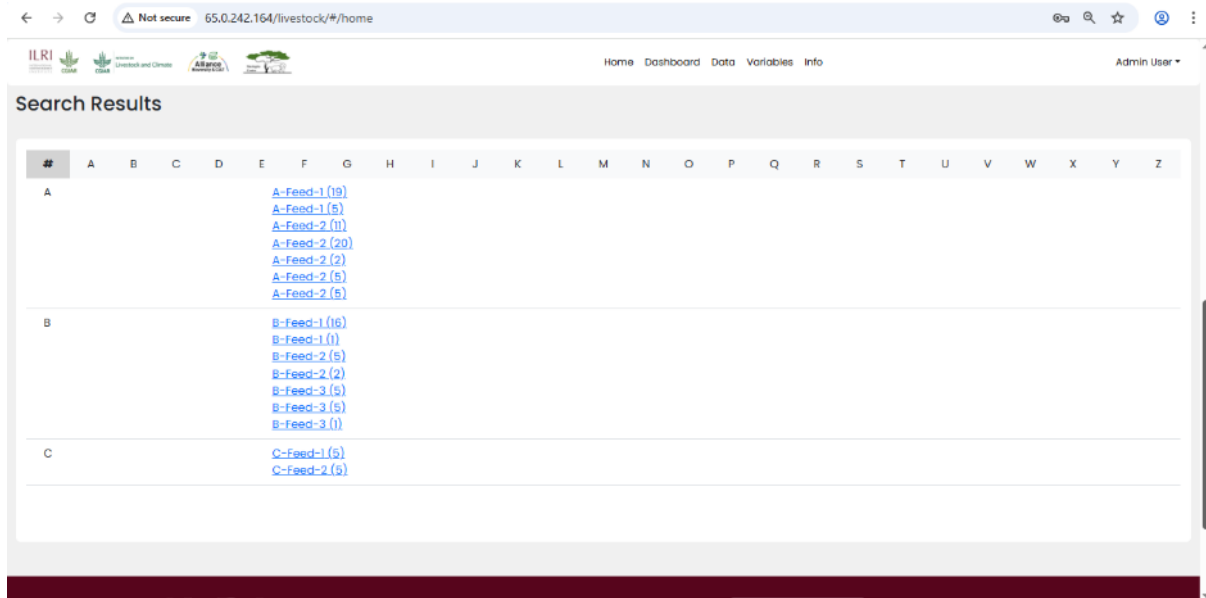


Figure 8

**View More and Feed Cards**

- Feed cards visually represent feed categories on the Home Page, making browsing intuitive and user-friendly.

- The “View More” option allows users to move from summary views to detailed feed listings and explore complete datasets within each category.

**Feed Data and Classification**

**Feed Data Pages**

- Each feed data page presents detailed, approved nutritional information for a selected feed. (Figure 9)
- Information includes common and scientific names, total records, and country-wise nutritional values displayed in tables.

- Summary statistics such as minimum, maximum, and average values support quick interpretation. (Figure 10)
- Users can export data and view variable definitions, units, and analysis methods for transparency.

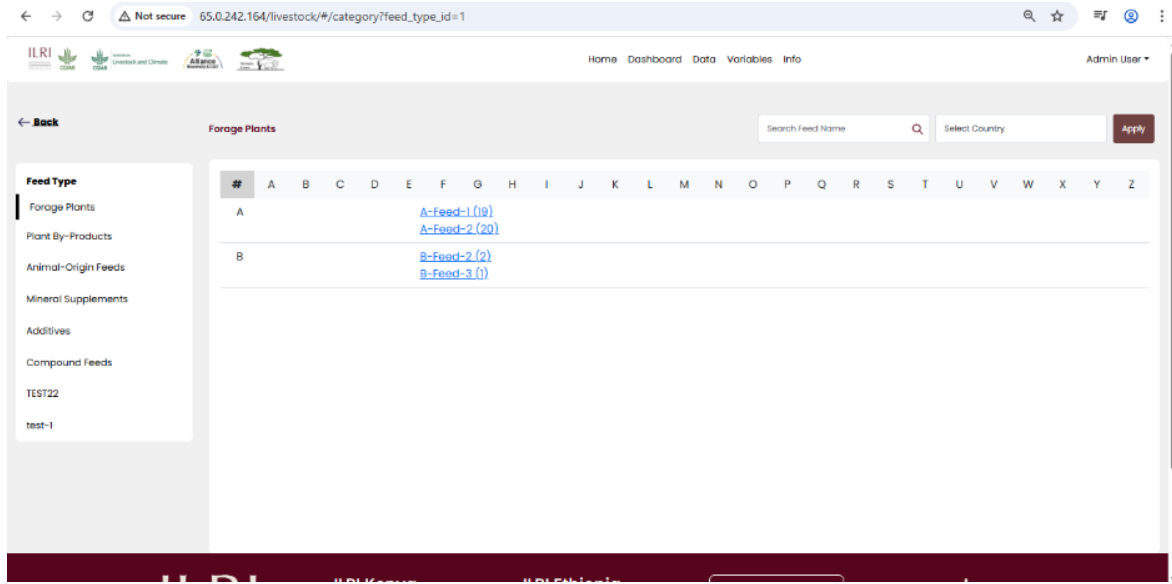


Figure 9

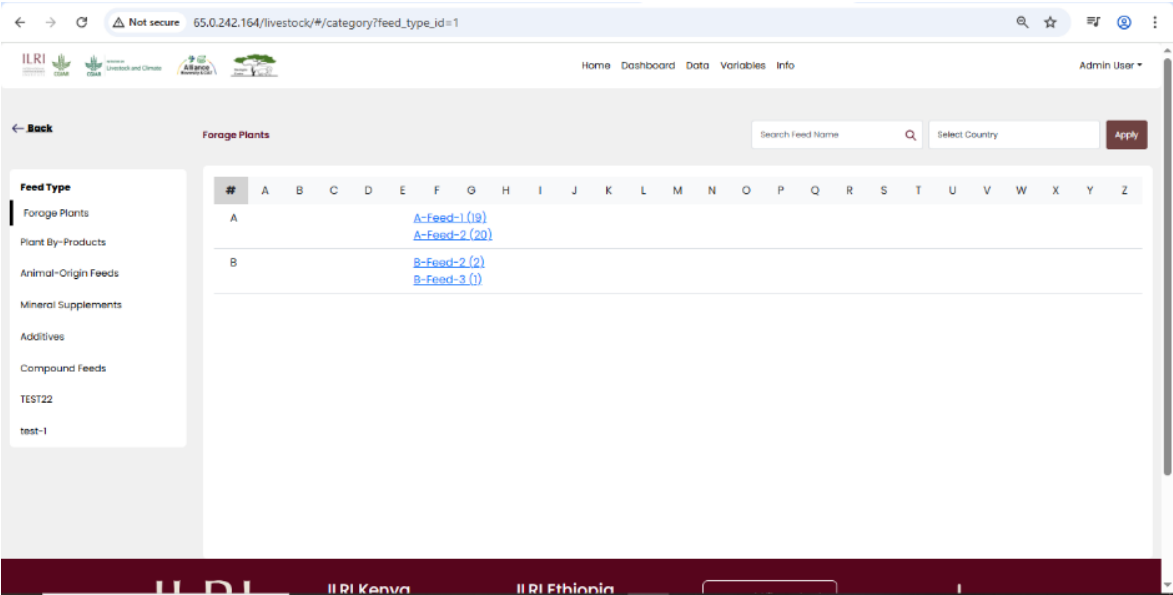
The screenshot shows the details page for 'A-Feed-1'. The page title is 'Home / Forage Plants / A-Feed-1'. It includes a breadcrumb trail and a list of variables: Scientific name: A-Feed-1, Feed name: A-Feed-1, Total Records: 19. There is an 'Export Data' button and a link to 'Click here to see the variable name, units, and analysis method for each of the variables below.' Below this is a table with the following data:

Reference ID	DM	Ash	N	CP	NDF	ADF	ADL	GE	OM	In-vitro DMD	Yield	ME	Country
SC1	15	15	15	15	15	15	15	15	15	15	15	15	
SC2	15	15	15	15	15	15	15	15	15	15	15	15	
SC1	15	15	15	15	15	15	15	15	15	15	15	15	
SC2	15	15	15	15	15	15	15	15	15	15	15	15	
SC3	15	15	15	15	15	15	15	15	15	15	15	15	
SC4	15	15	15	15	15	15	15	15	15	15	15	15	
SC5	15	15	15	15	15	15	15	15	15	15	15	15	
SC1	15	15	15	15	15	15	15	15	15	15	15	15	
SC2	15	15	15	15	15	15	15	15	15	15	15	15	
SC3	15	15	15	15	15	15	15	15	15	15	15	15	
SC4	15	15	15	15	15	15	15	15	15	15	15	15	
SC5	15	15	15	15	15	15	15	15	15	15	15	15	
SC1	15	15	15	15	15	15	15	15	15	15	15	15	
SC2	15	15	15	15	15	15	15	15	15	15	15	15	

Figure 10

**Feed Types**

- Feeds are grouped into predefined categories based on origin and use, allowing structured browsing and comparison.
- This categorization supports better understanding of feed diversity and nutritional variation across livestock systems. (Figure 11)



**Figure 11**

**Dashboard and Data Visualization**

The Dashboard provides an analytical overview of feed sample data.

- It presents visual summaries such as total sample counts, monthly trends, geographic distribution maps, cropping systems, and taxonomy classifications.(Figure 12 & 13)
- Filters allow users to refine data by location, feed characteristics, and processing details, making trend analysis easier.

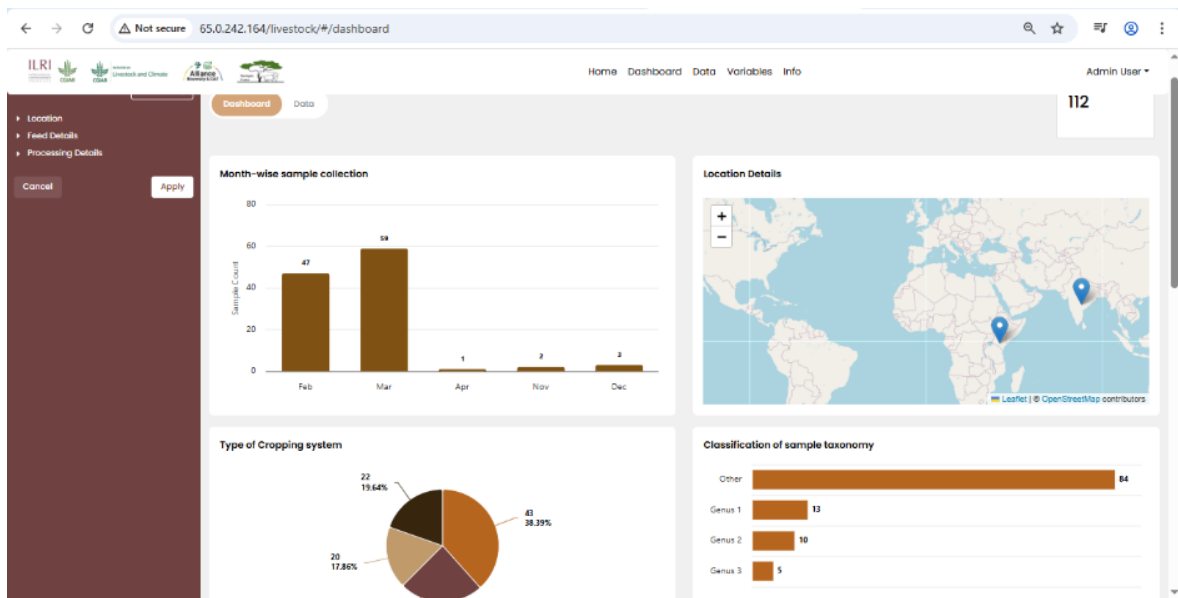


Figure 12

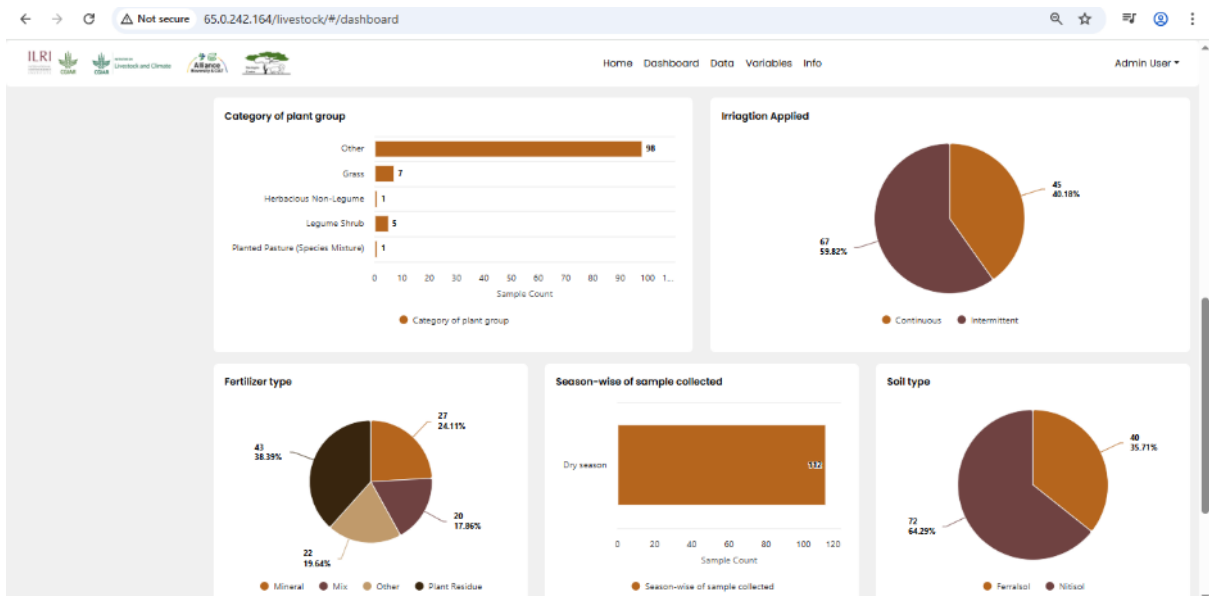


Figure 13

**Dashboard – Data View**

- The Data View presents consolidated feed sample information in a table format. (Figure 14)
- Users can filter results and download datasets for offline analysis or reporting.

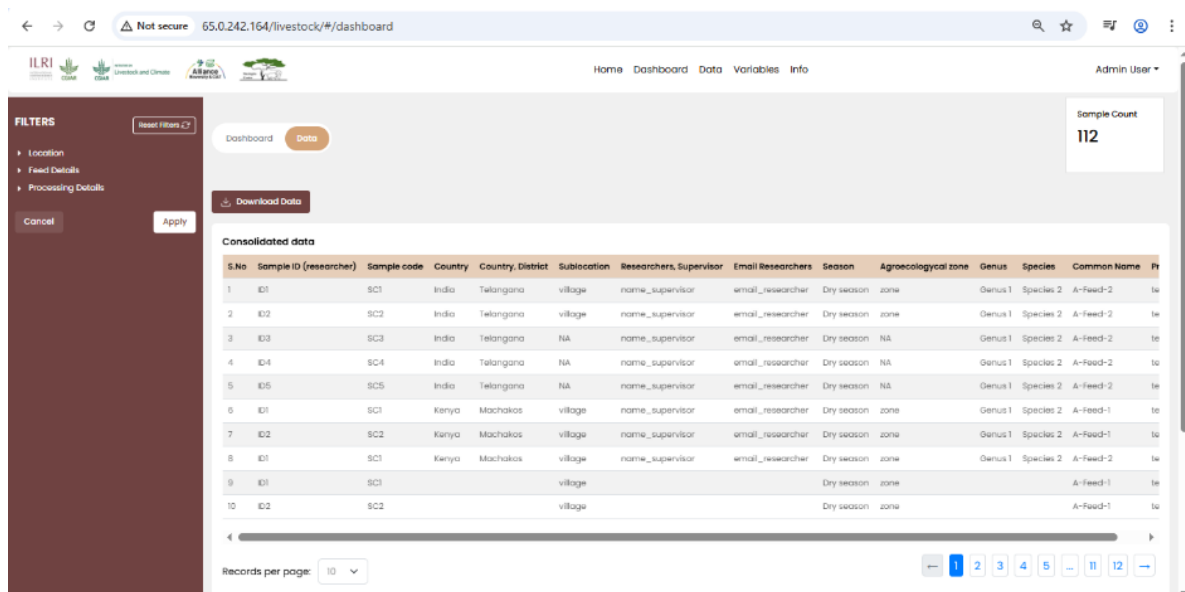


Figure 14

## Data Submission and Review Process

### Overview and Recent Requests (Figure 15)

- The Overview page summarizes system activity, including total feeds, variables, countries, and users.

- Recent Requests display newly submitted feed data along with verification status and submission details.
- Managers can view and act on all requests, while General Users can track only their own submissions.

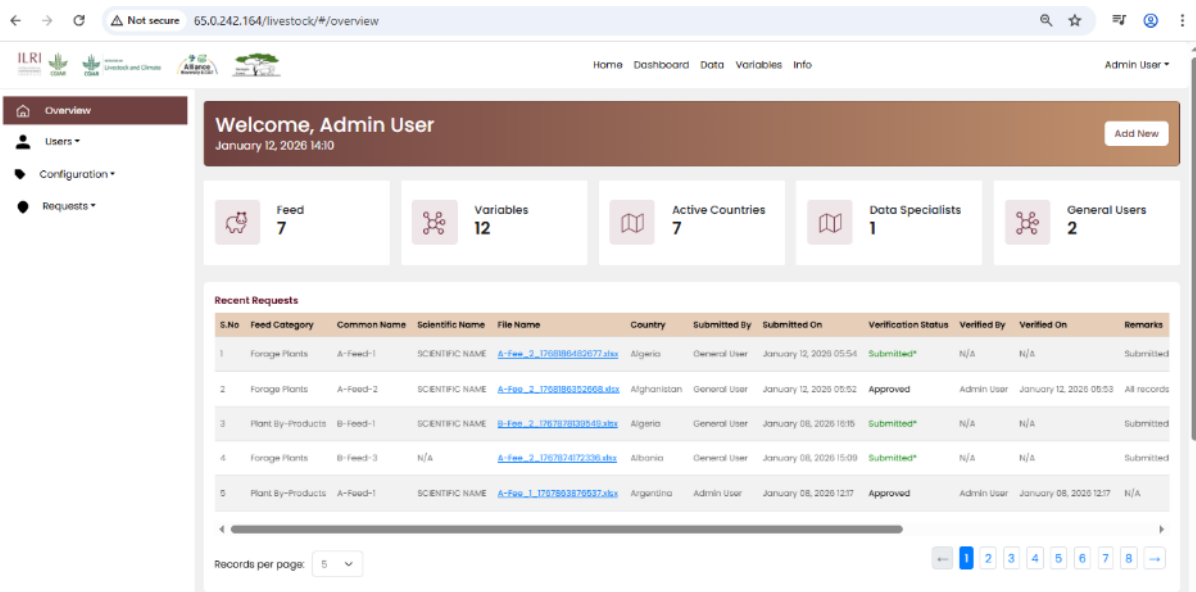


Figure 15

### Add New Data

- Managers and General Users submit feed data using a standardized Excel template. (Figure 16)
- The system validates uploaded data automatically.
- Submissions by Managers are auto-approved, while General User submissions require Manager review.

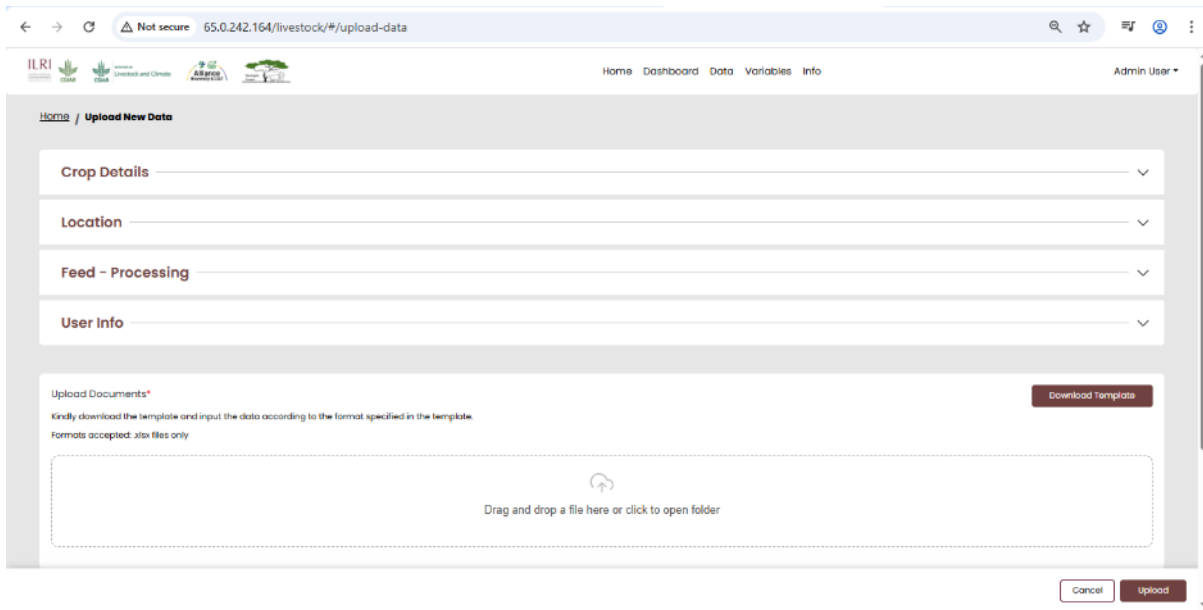


Figure 16

### View and Edit Requests (Figure 17-20)

- View Request displays full submission details and highlights invalid entries for easy correction.
- Edit Request is allowed only before approval, ensuring data accuracy while maintaining strong quality control.

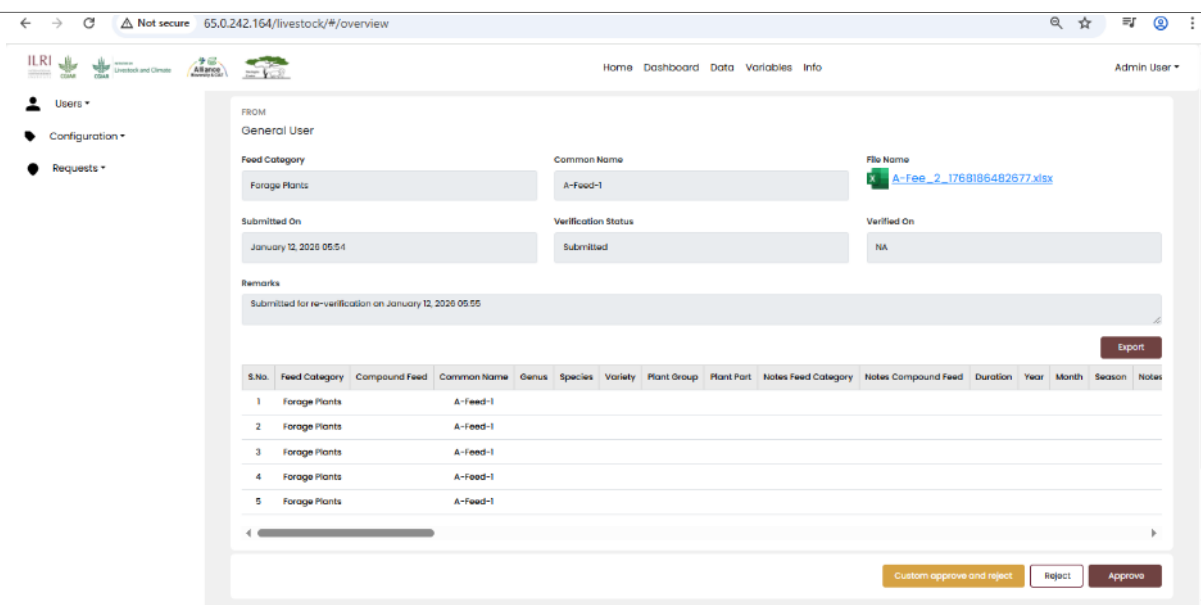


Figure 17

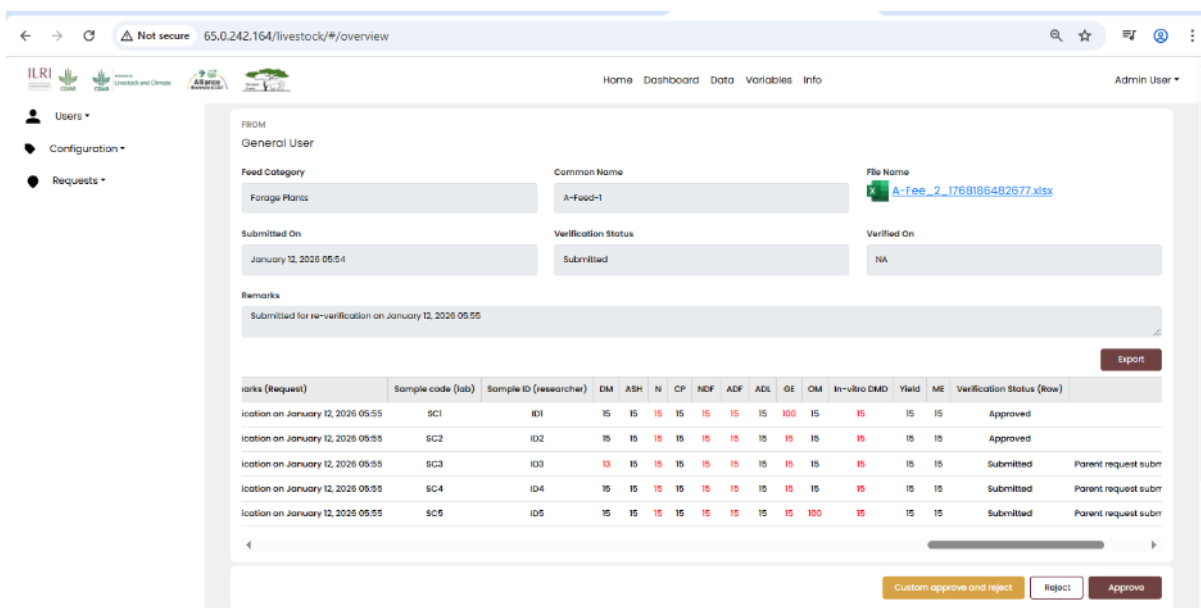


Figure 18

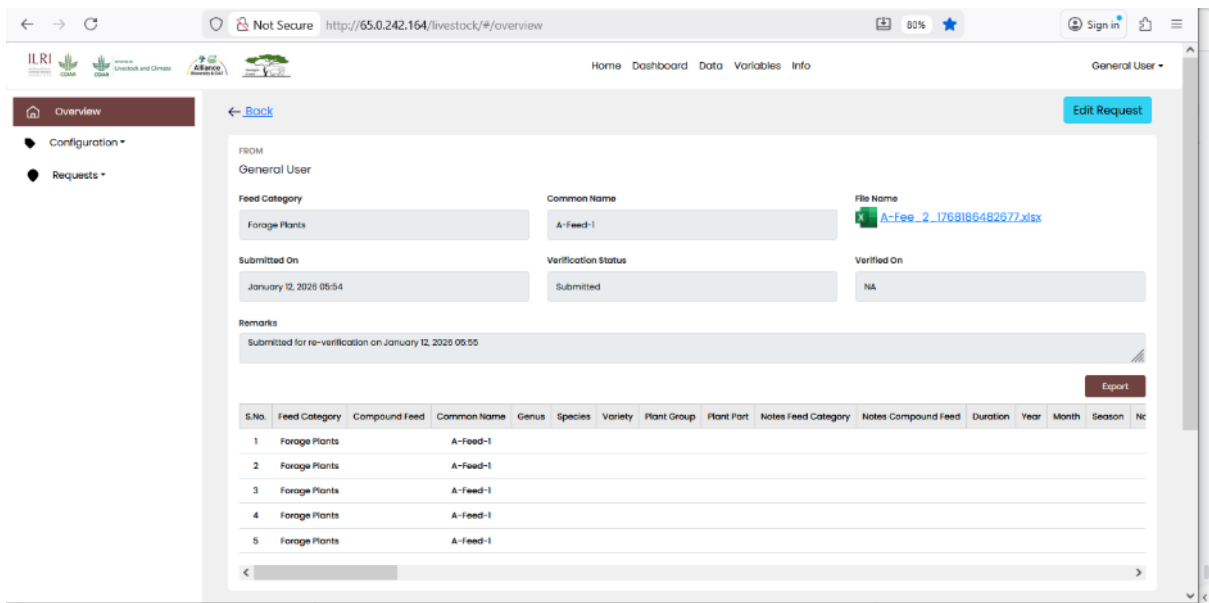


Figure 19

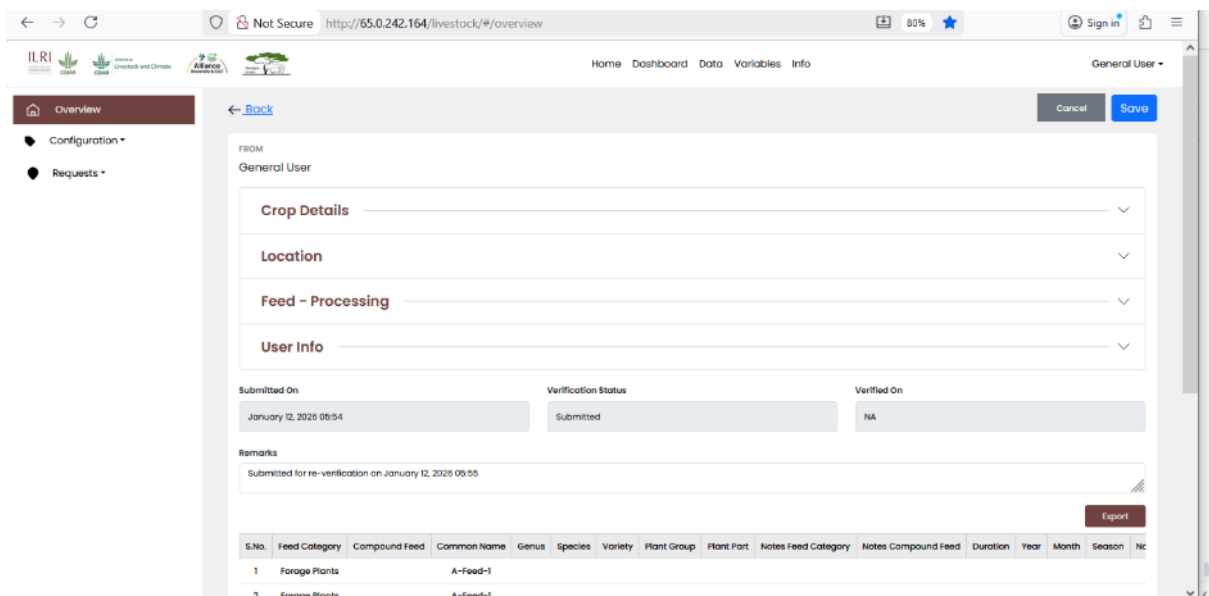


Figure 20

## User and Access Management

### Users and System Users

- The Users section is restricted to Managers and supports role-based access control.
- Managers can add new users, edit user details, reset

passwords, and manage system access.

### Guest Users and Registration

- Guest Users are external users with limited access, primarily for data viewing and export.
- Guest registration ensures traceability and controlled access before allowing data export. (Figure 21-25)

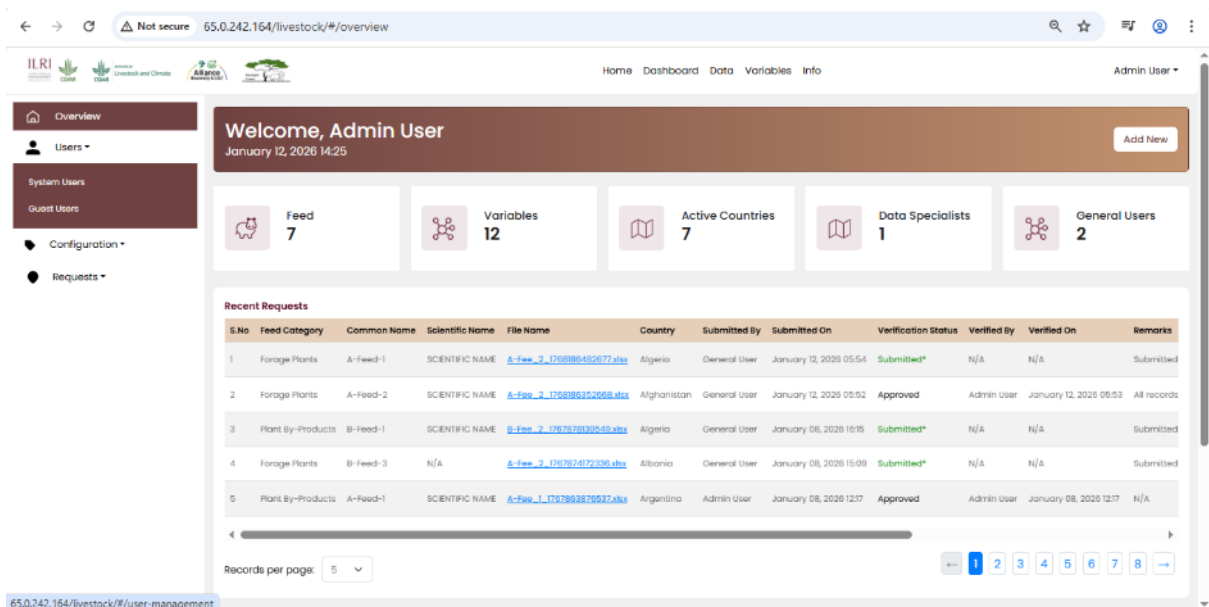


Figure 21

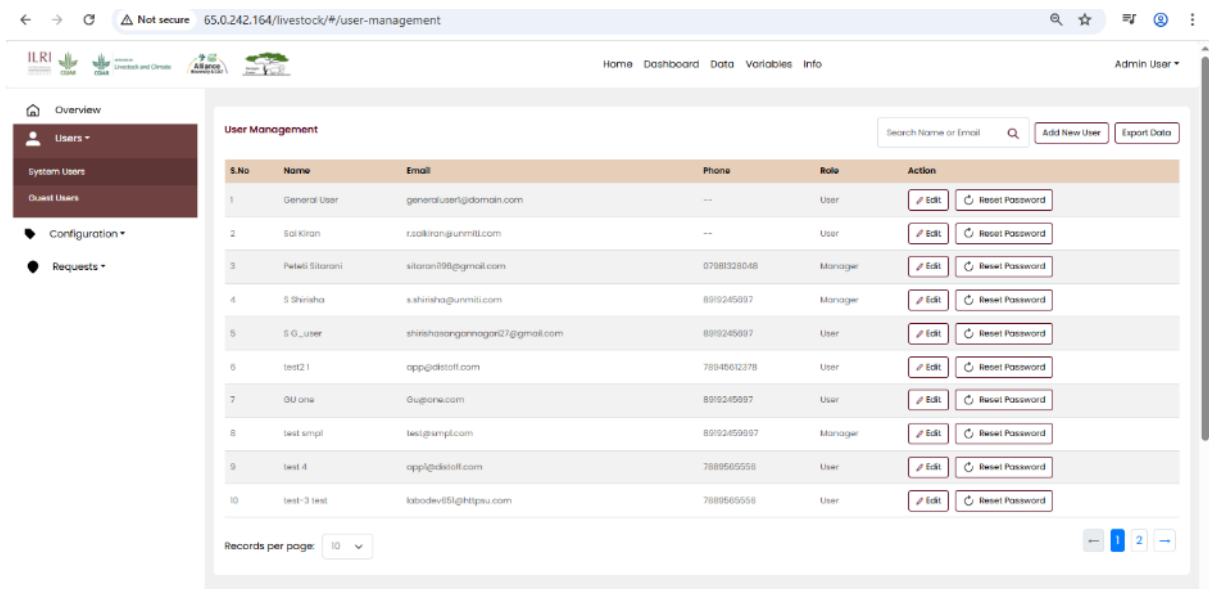


Figure 22

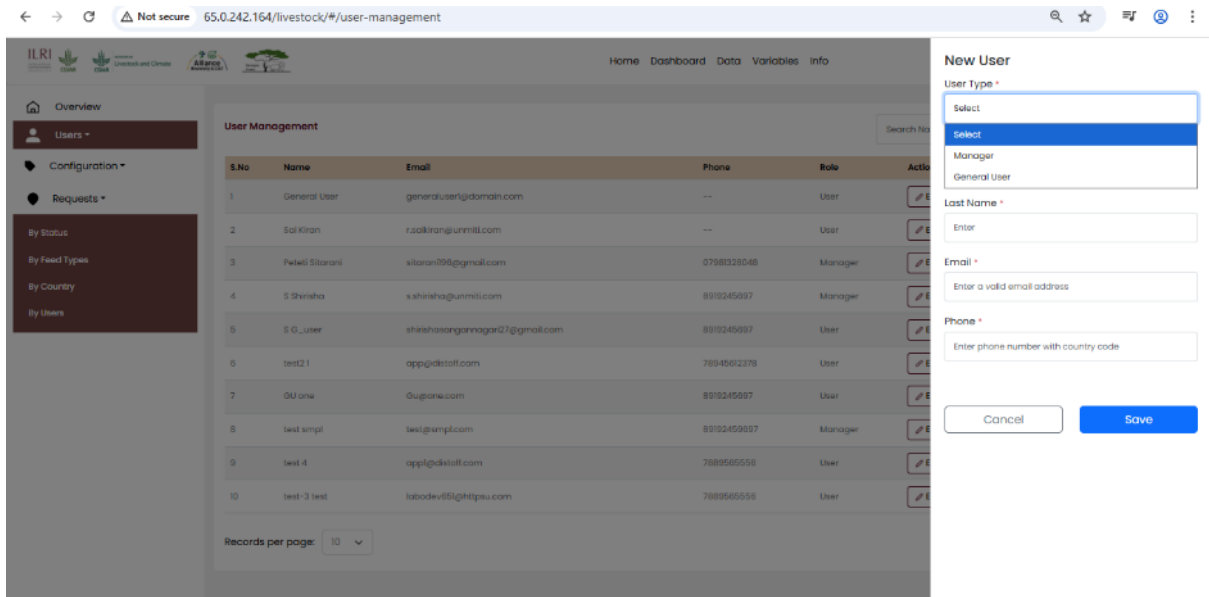


Figure 23

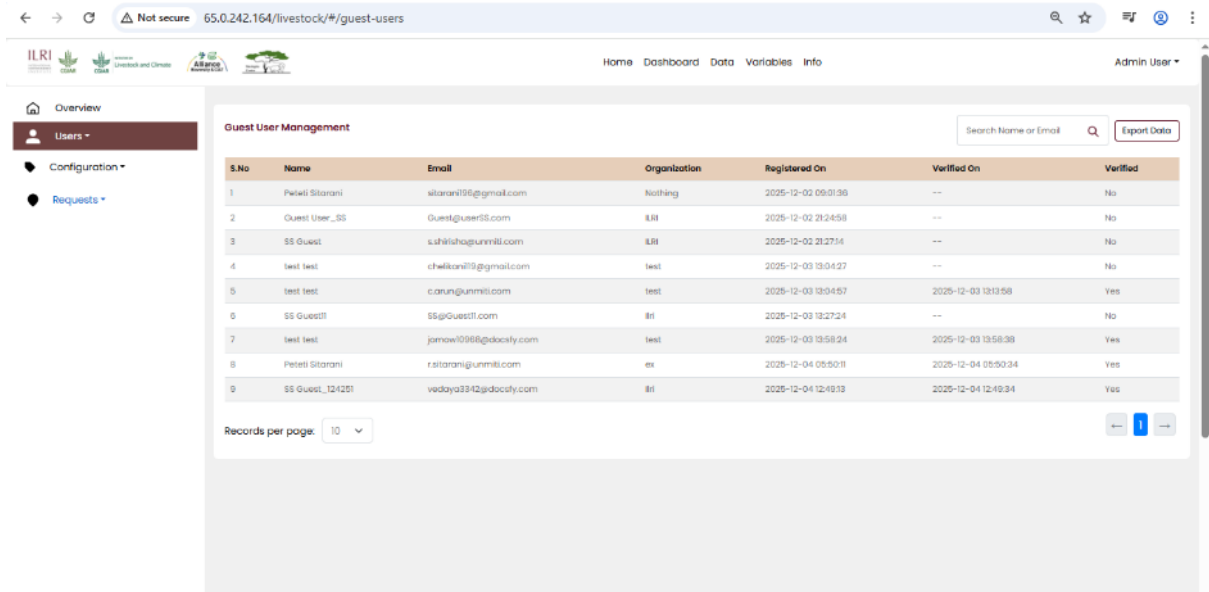


Figure 24

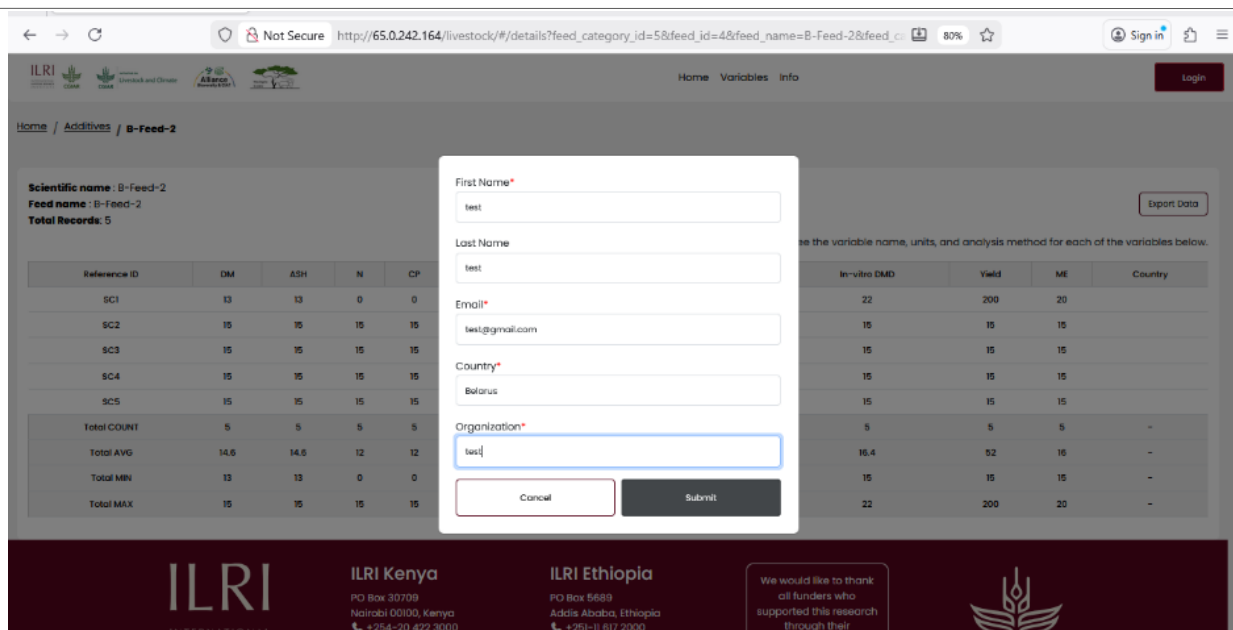


Figure 25

## Configuration and Standards

### Feed Configuration

- Managers maintain master data such as feed categories, plant parts, cropping systems, countries, seasons, and processing methods.
- This ensures standardized data entry and consistent filtering across the platform. (Figure 26)

### Variable Configuration

- Nutritional variables (e.g., DM, CP, NDF, ADF) are centrally managed to ensure consistent units, definitions, and analytical methods. (Figure 27)

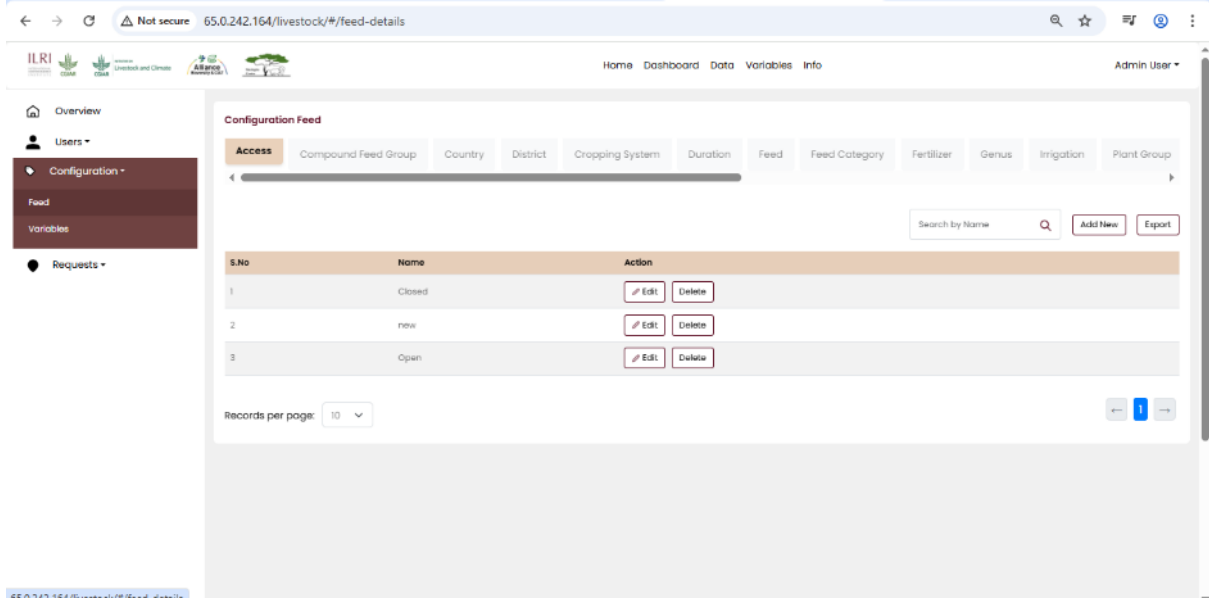


Figure 26

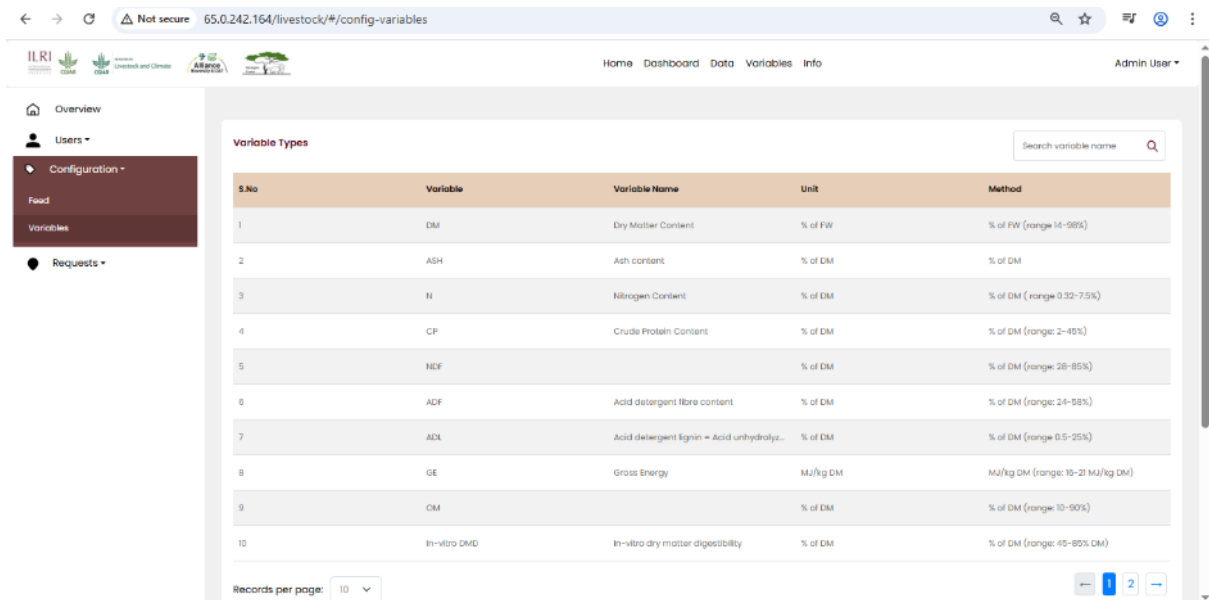


Figure 27

## Requests Tracking and Monitoring

- Requests can be viewed by status, feed type, country, or user.
- Managers have full visibility across all requests and can perform approvals, rejections, or row-level decisions. (Figure 28-29)

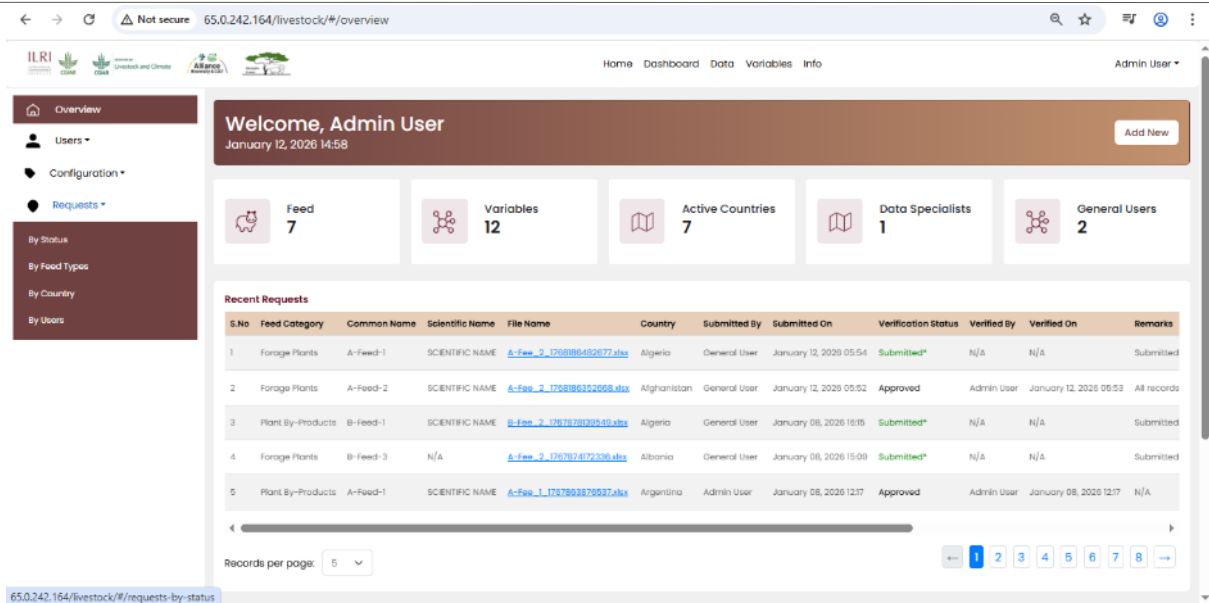


Figure 28

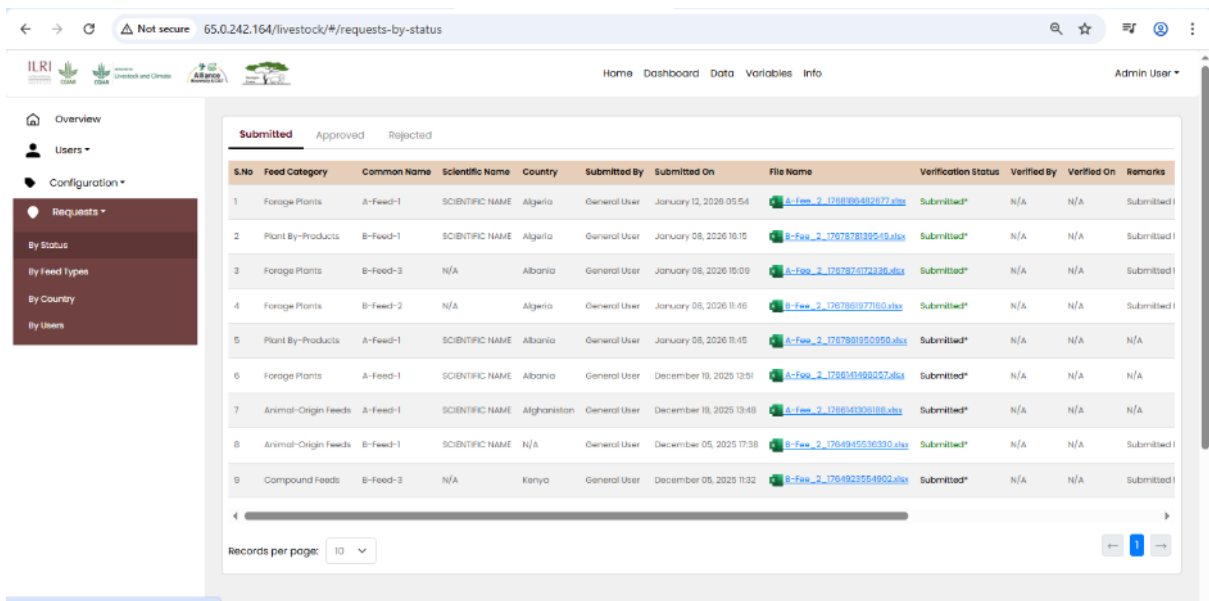


Figure 29

## Reference Information and Support

The Info section provides essential background and support details.

- It includes reference links, contact information,

organizational credits, and disclaimers on data usage and accuracy.

- This section ensures users clearly understand data ownership, limitations, and points of contact. (Figure 30)

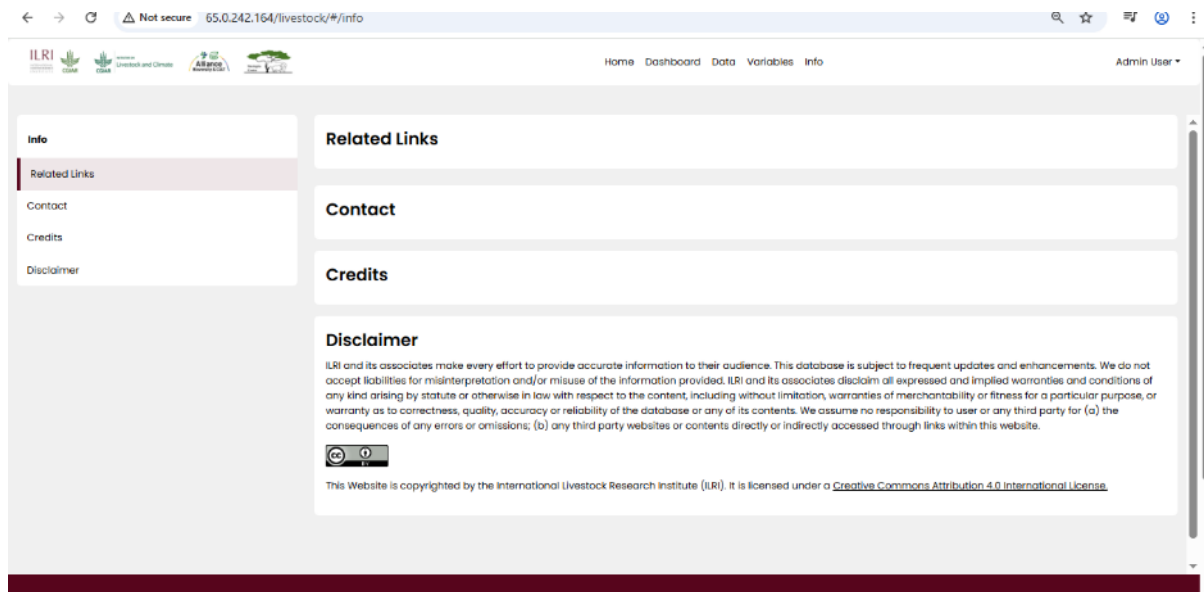


Figure 30

## Conclusion

The Livestock Feed Quality Database serves as a transparent, inclusive, and well-governed platform for sharing livestock feed quality information. By combining

open access with strong validation mechanisms, the system balances usability with data reliability. Its user-friendly design, structured workflows, and role-based controls make it a valuable digital public resource that supports informed decision-making, collaboration, and sustainable livestock development.

### Acknowledgements

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