



AGROCHEMICALS AND ALTERNATIVES

Pesticide Use and Risks in
Murang'a and Kirinyaga Counties



A SURVEY ON FARMER PRACTICES, PESTICIDE USE AND ALTERNATIVES IN KIRINYAGA AND MURANGA COUNTIES



Photo: Gakuo River

Report by: Martin Njoroge

Survey Objectives

- To understand the current farm practices including pesticides, herbicides, fungicides used, GAP used and farm characteristics in the two counties
- To understand sources and motivation of information and advisory provided to farmers
- To explore alternative safe alternatives being used in the County and their level of effectiveness.
- Come up with recommendations and strategies of reducing the use toxic pesticides in the two Counties.

Respondents

Organic farmers

Conventional farmers

Extension officers

Agrovet dealers

Companies selling alternative pesticides

Scientists working in Organic agriculture

Type of Information collected

Farmers

- Crops grown
- Pests and diseases
- Pesticides, herbicides and fungicides used
- GAPs used
- Social organization
- Supporting structures

Extension officers

- Services offered
- Pesticides, fungicides and herbicides recommended
- Prominent crops pests and diseases
- Solutions recommended

Agrovet dealers

- Herbicides, pesticides and fungicides sold
- Main crops grown in the area
- Main pests and diseases, solutions
- Advice normally given to farmers.

Companies

- Pesticides, herbicides, fungicides sold
- Target pests, registration with PCPB
- Organic alternatives sold
- Brand names, target pests and diseases

Scientists

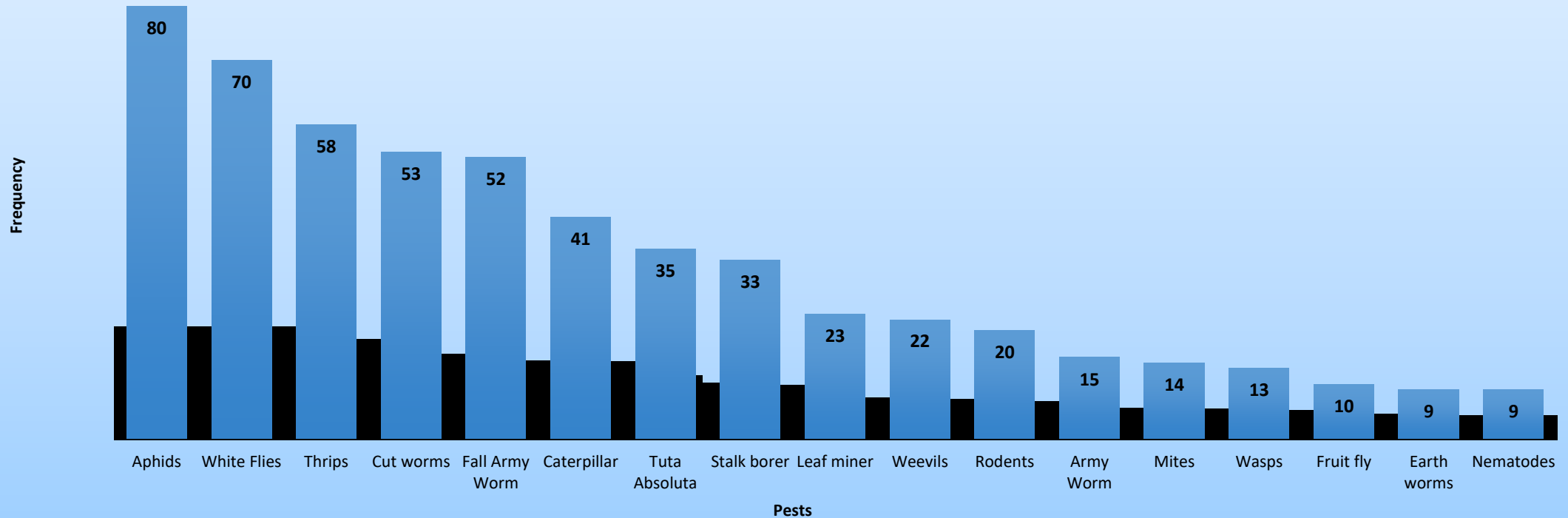
- GAP practices, common pests, diseases
- Documented organic solutions, publications related to organic
- Agroecology, sustainable agriculture practices.

Data collection: Methodology

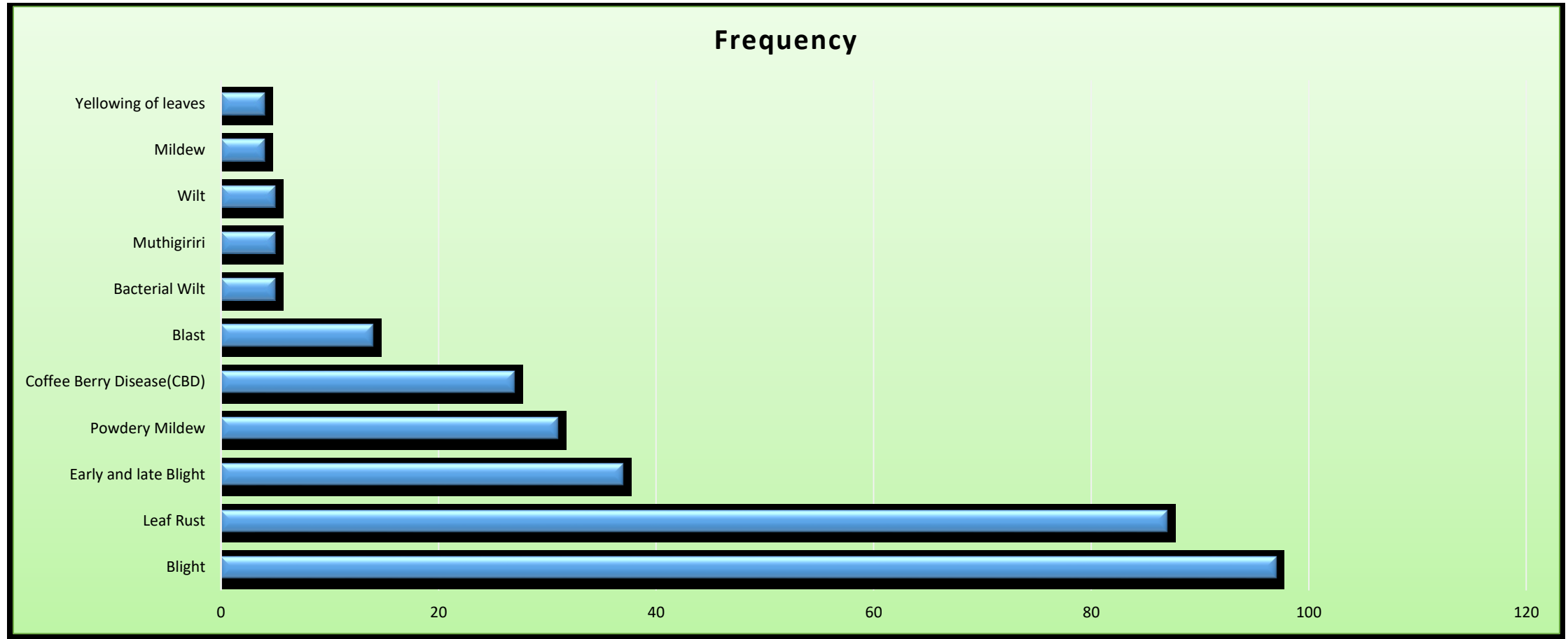
- A household survey was done among a sample of 280 farmers
- Interviews were conducted among 20 Agroveter dealers
- Interviews with 20 extension staff
- Telephone interviews and questionnaires sent to 10 Companies selling organic inputs
- Questionnaires sent to 10 scientists.

Common pests

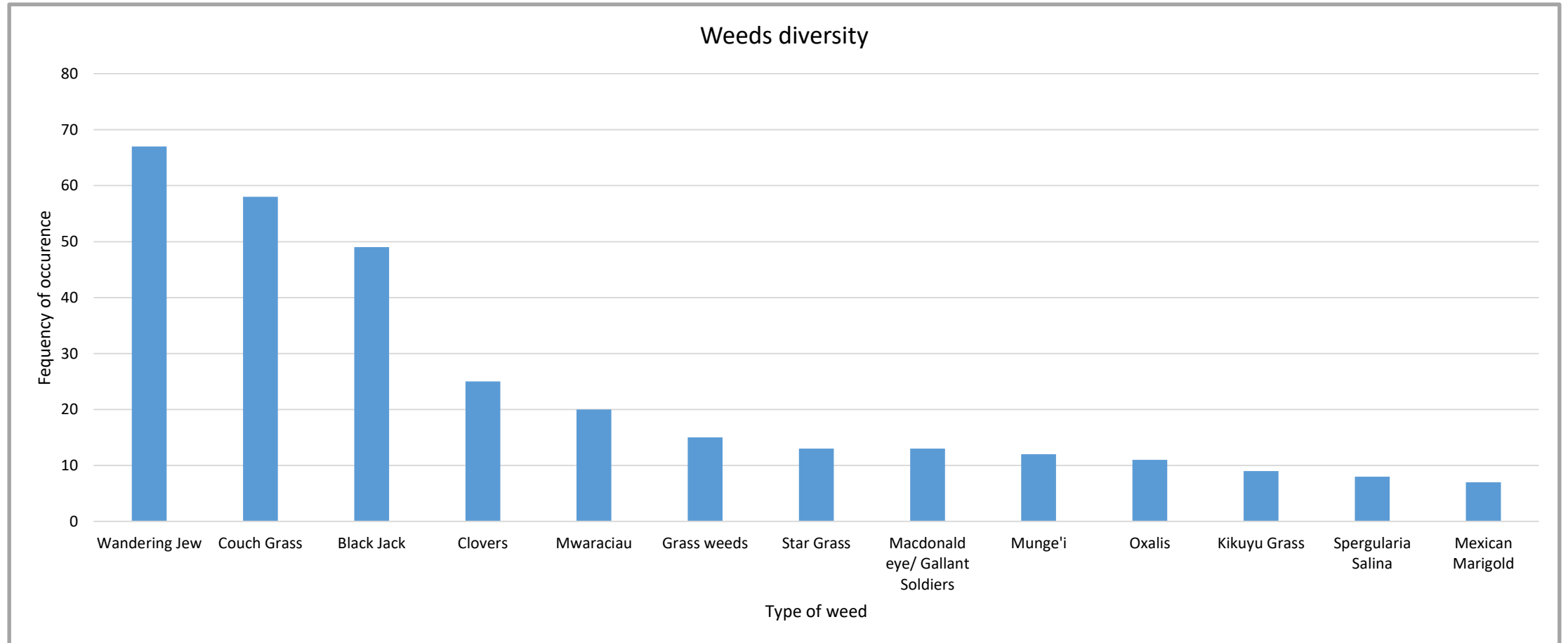
Most common pests in Muranga and Kirinyaga



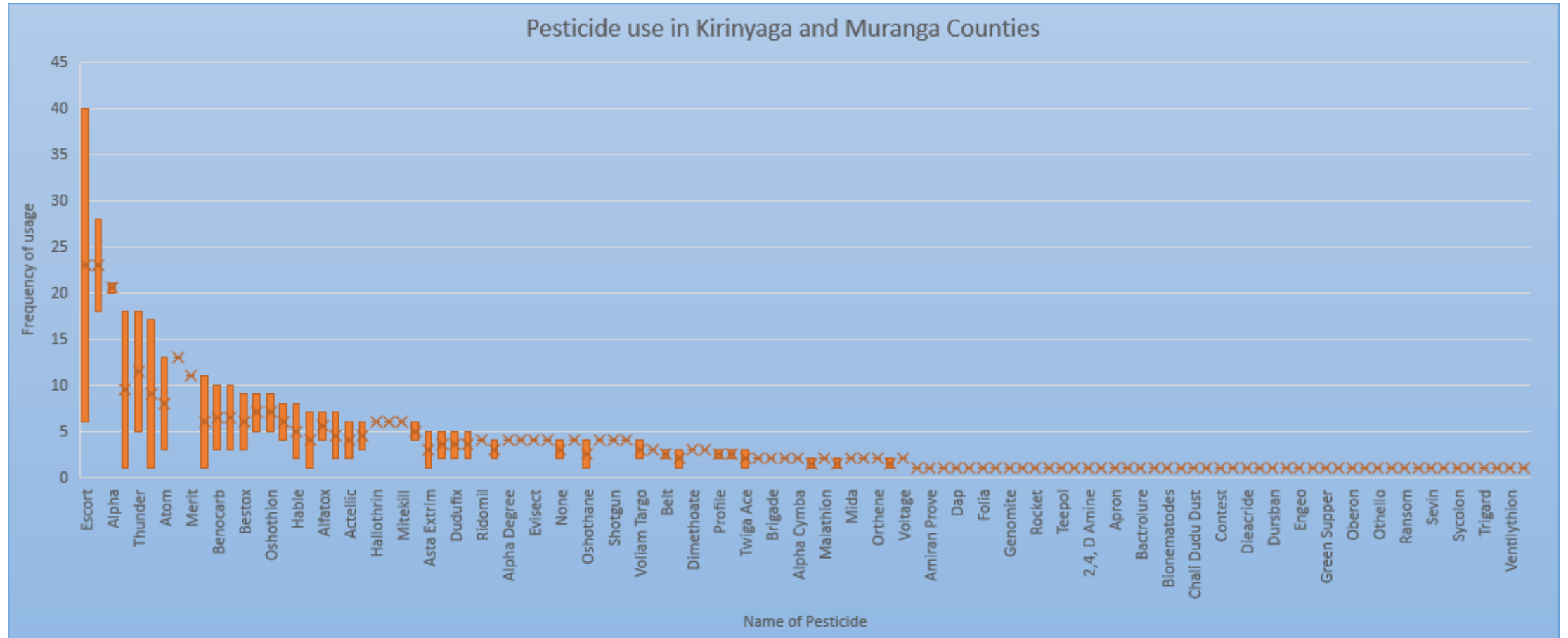
Common diseases



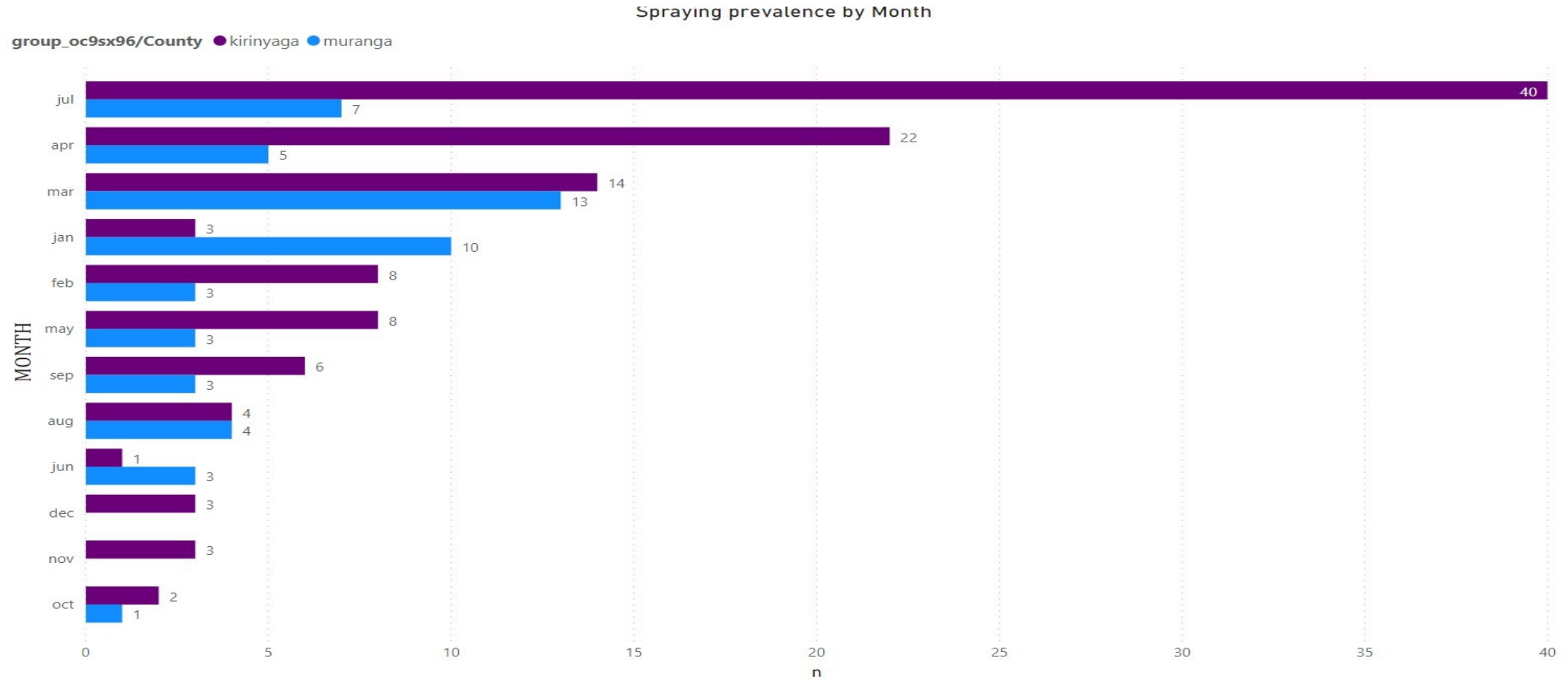
Weeds Diversity



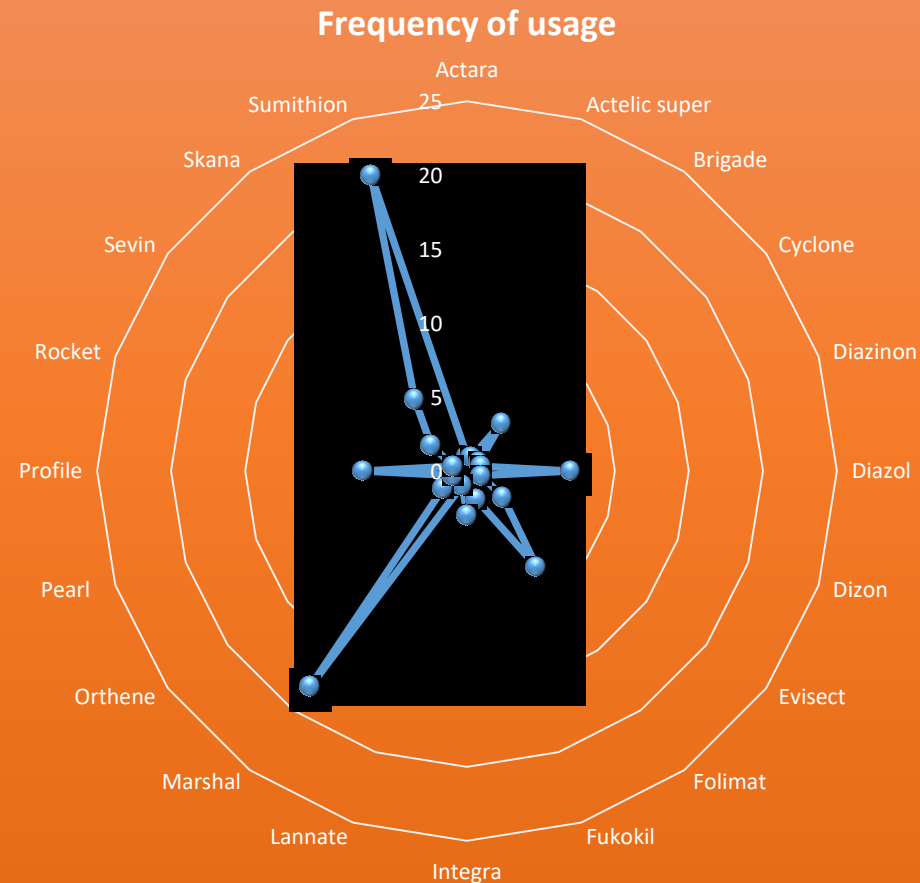
Common pesticides



Spraying prevalence



Use of toxic pesticides in Muranga and Kirinyaga



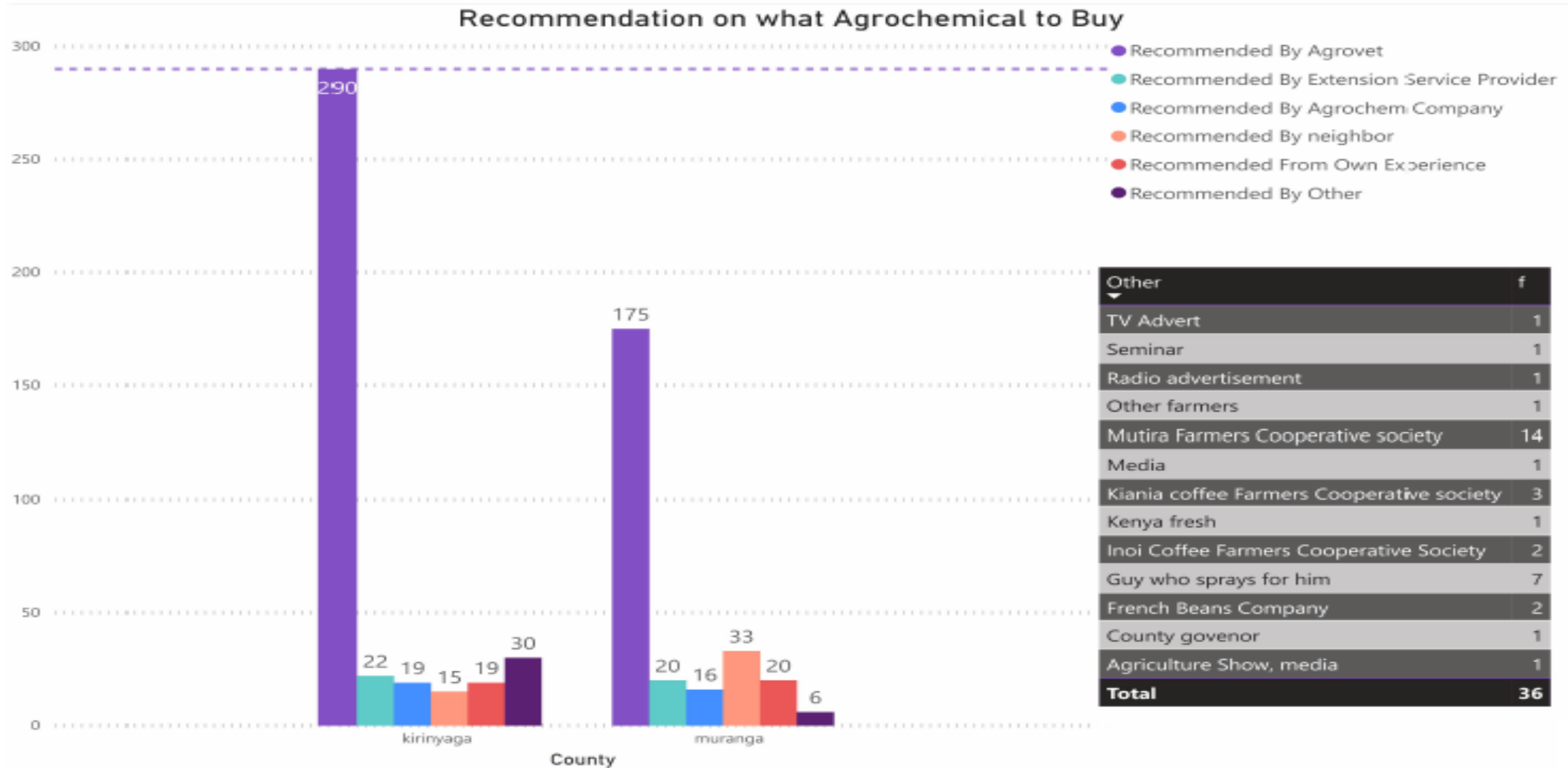
Toxic Chemicals and their registration status

AGROCHEM BRAND	OCCURENCES	ACTIVE INGREDIENT	IN KENYA REGSITERED FOR	REGISTERED FOR
Sumithion	21	fenitrothion	Twiga Chemical Industries Ltd.	Leafminers, antestia bugs and thrips in coffee
Marshal	18	Carbosulfan	Juanco SPS Ltd.	Maize stalk borer control; coffee thrips, coffee berry borer, leaf miner, star scale, fried egg scale control, cotton aphid control; citrus - red scale control, flowers against mites.
Diazol	7	Diazinon	Amiran (K) Ltd./ Distributor: Farmchem Ltd.	Insecticide for the control of wide range of pests on all major agricultural crops - fruits, vegetables, ornamentals, coffee
Profile	7	Profenofos + Cypermethrin	Greenlife Crop Protection Africa Ltd	Insecticide for the control of Thrips, Aphids, spider mites, caterpillars and whiteflies on Roses; and Thrips, Aphids, spider mites, and whiteflies on carnations; aphids, whiteflies and thrips on tomatoes; thrips in onions.
Skana	6	Malathion + Permethrin	Osho Chemical Industries Ltd.	Insecticide for use in stored grains against common pests including the larger grain bore
Brigade	4	Bifenthrin	Juanco SPS Ltd.	Insecticide / Miticide for the control of various insect pests and mites on citrus, ornamentals/ Flowers, vegetables, cotton, coffee, barley.
Sevin	3	Carbaryl	Bayer East Africa Ltd.	A broad spectrum insecticide for the control of crawling insect domestic environs e.g. cockroaches, ants etc.
Evisect	3	Thiocyclam	Arysta Lifescience Corporation (K) Ltd., P.O. Box 30335, Nairobi.	Insecticide / Miticide for the control of various insect pests and mites on citrus, Ornamentals/Flowers, vegetables, cotton, coffee, barley.

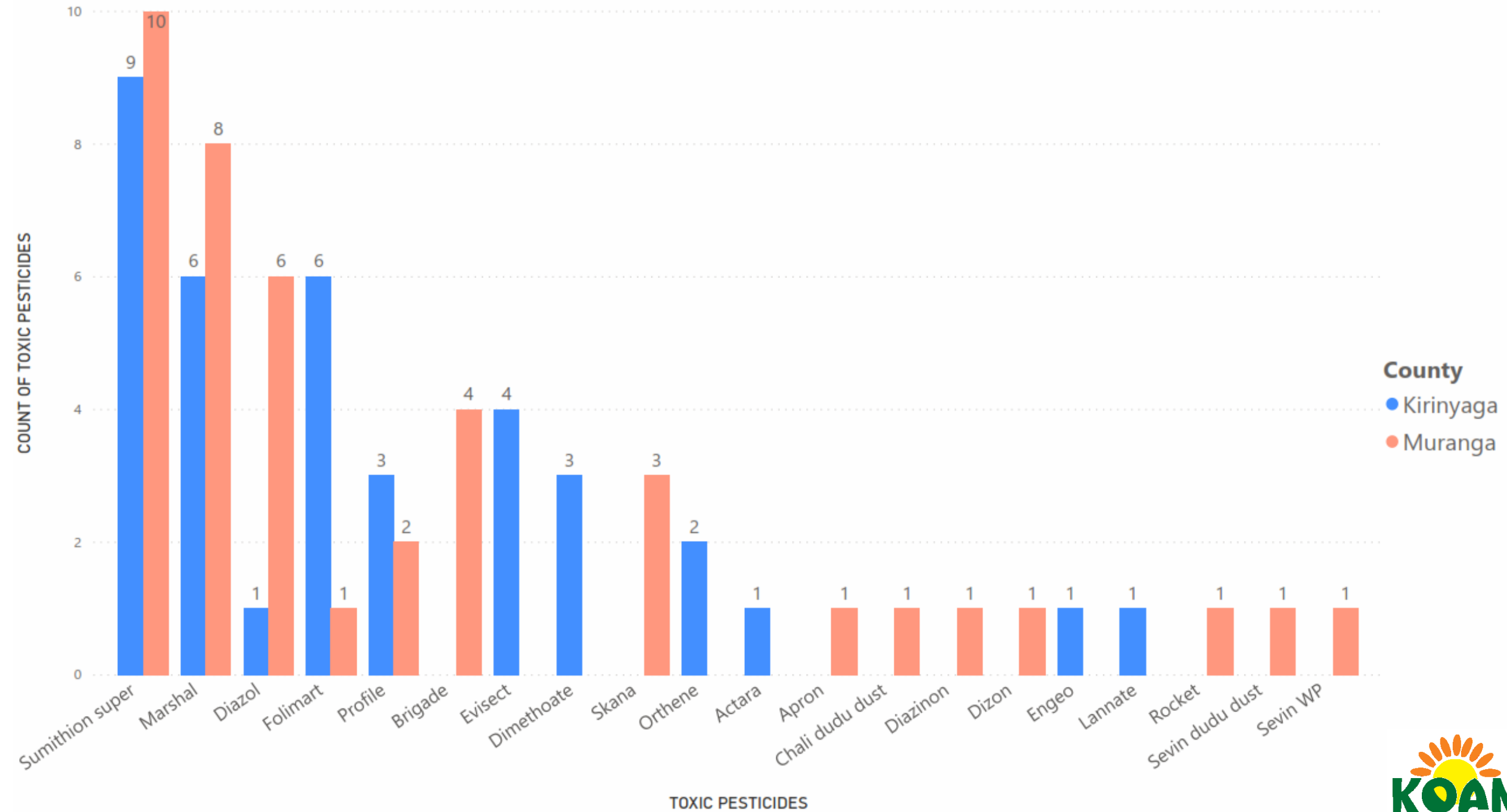
Toxic Chemicals Contd

Orthene	2	acephate	Arysta Lifescience (K) Ltd.	Insecticide to control aphids, thrips on Roses, french beans and tobacco.
Pearl	1	Carbendazim	Osho Chemical Industries Ltd.	Broad-spectrum fungicide for the control of botrytis and black spots on Roses.
Diazinon	1	Diazinon		A Public Health insecticide for the control of cockroaches and bedbugs in houses & other dwellings.
Dizon	1	Diazinon	Magnetic (K) Ltd.	Insecticide for the control of aphids, Leaf beetle and thrips on French beans, aphids, leafminer, whiteflies and mites in tomatoes, scale in citrus, mealybugs and scales on roses and diamond backmoth
Actelic super	1	Pirimiphos-Methyl + Permethrin	Syngenta E.A. Ltd.	Insecticide for the control of storage pests in stored grain-bulk-stored grain, bagged grain, storage surfaces. Also for the control of the insect pests in potatoes, vegetables, citrus, bananas, pineapples.
Rocket	1	Profenofos + Cypermethrin	East African Business Company Ltd	Insecticide for control of thrips, aphids, caterpillars and Whiteflies on Roses
Actara	1	Thiamethoxam	Syngenta E.A. Ltd.	Systemic broad spectrum insecticide for control of sucking & some chewing insects in vegetables, ornamentals, flowers and leaf miner in coffee; For use on Tobacco to control aphids, weevils, whiteflies and leaf beetles

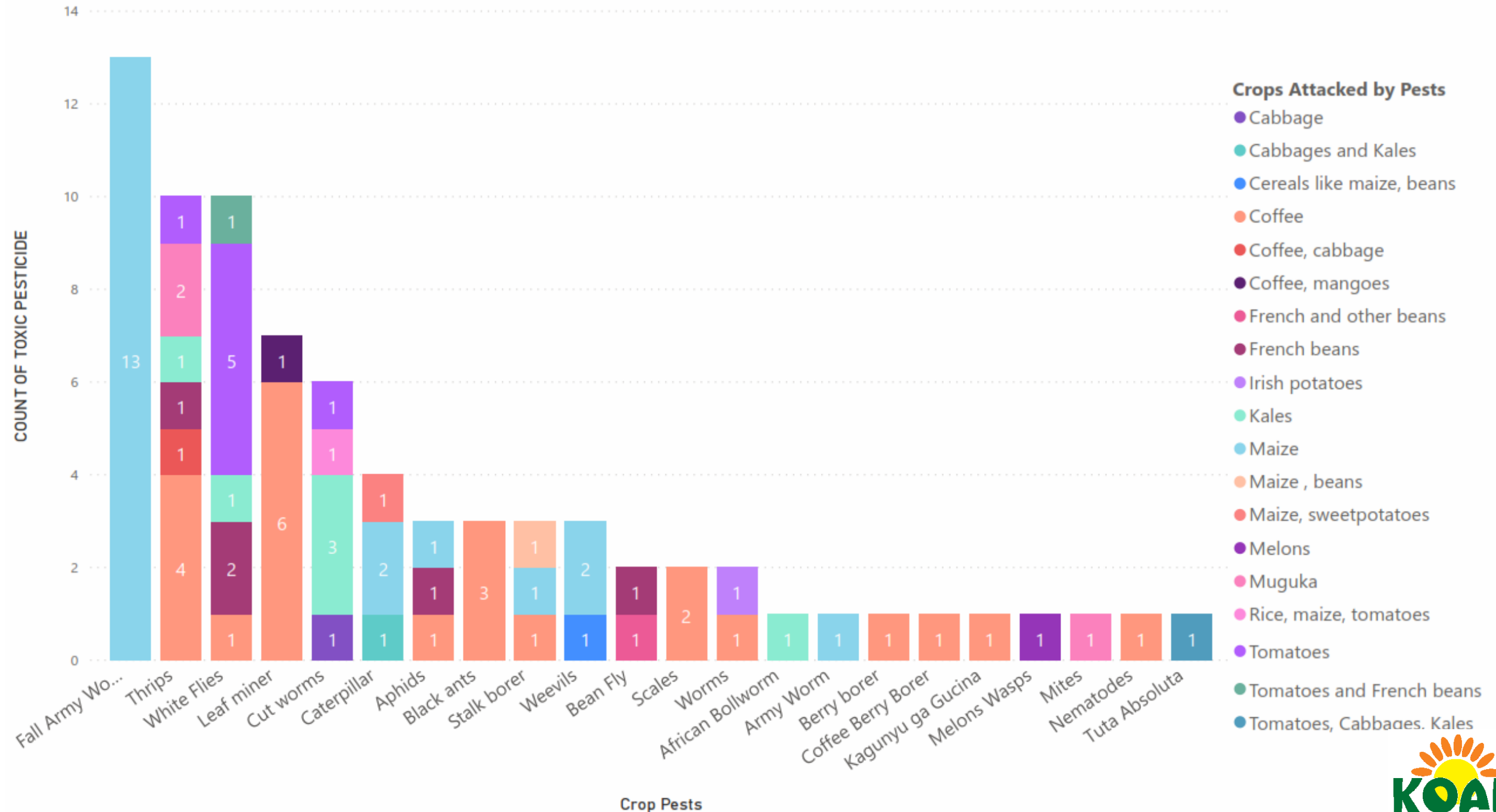
Source of recommendation on use of pesticides



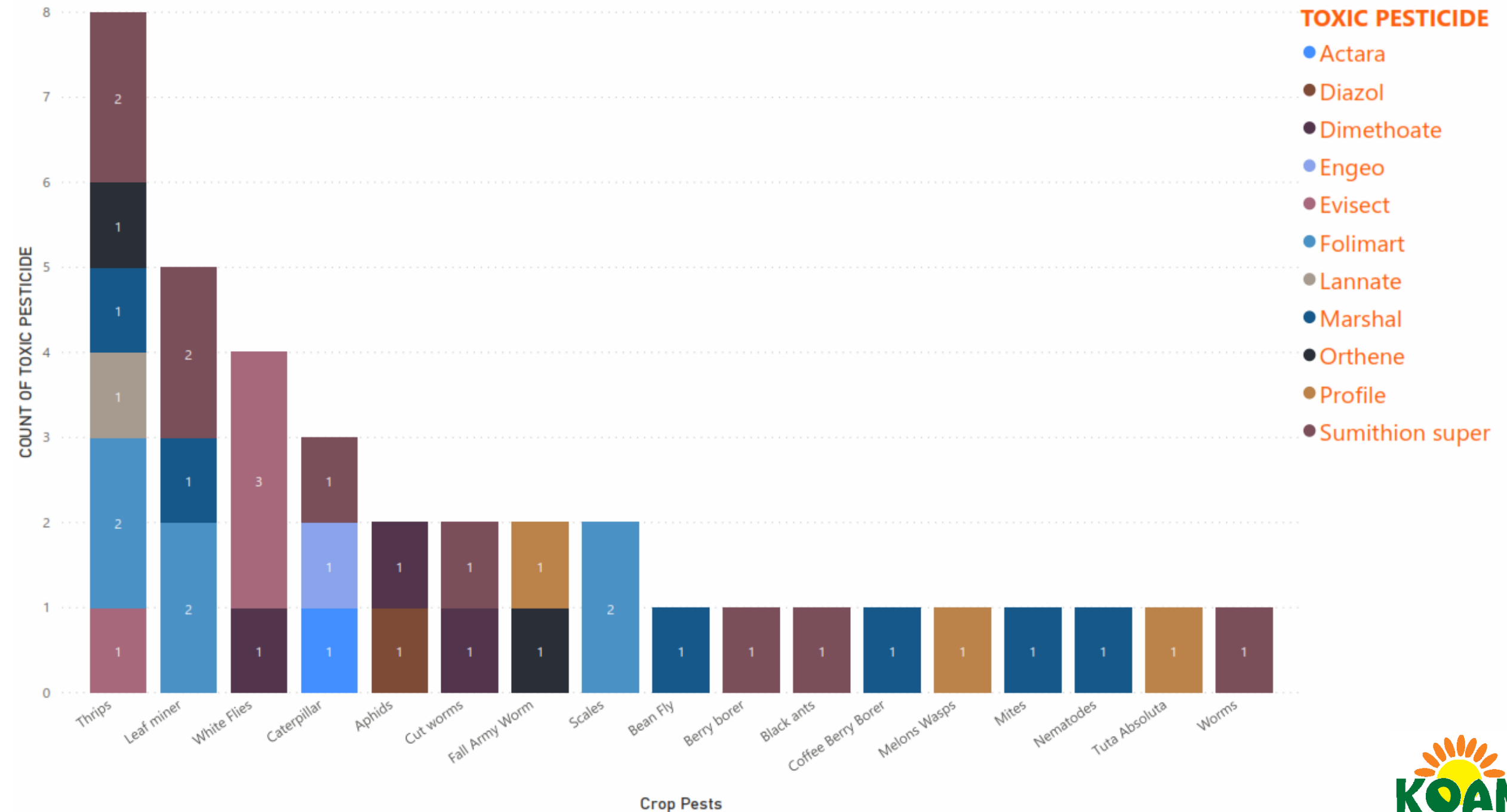
SHARE OF TOXIC PESTICIDES USED BY COUNTY



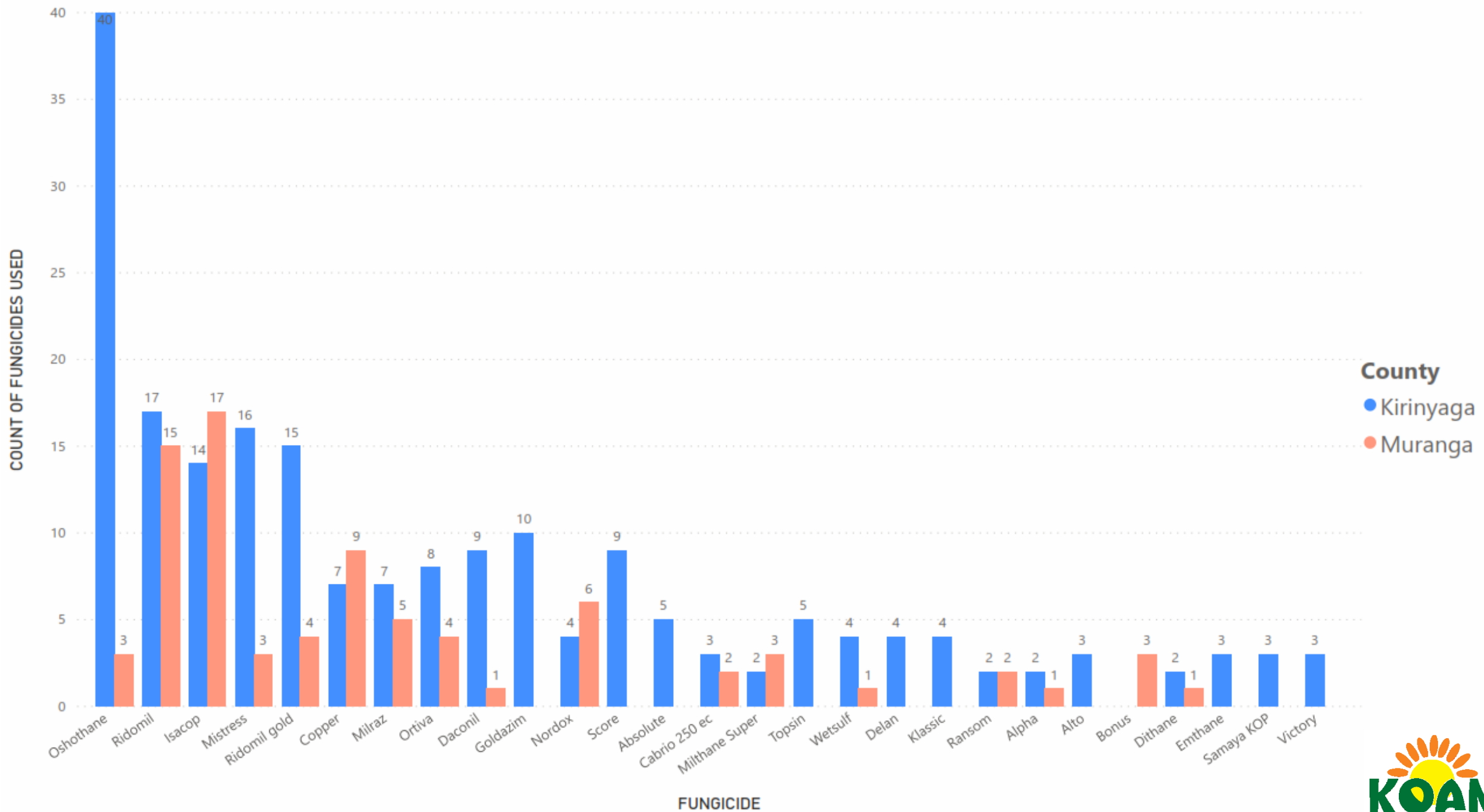
TOXIC PESTICIDE USE BY PEST AND CROPS AFFECTED



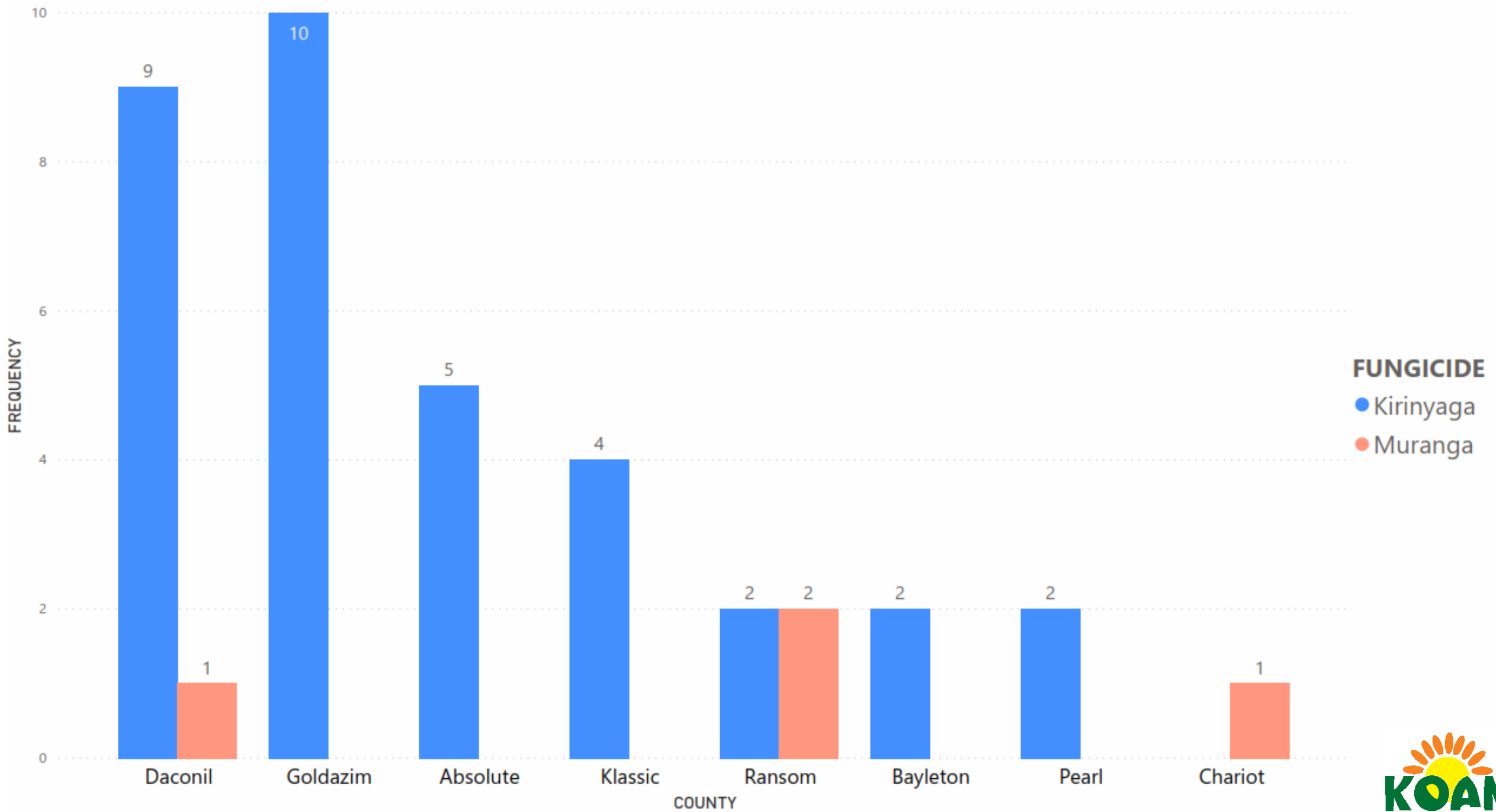
CROP PESTS BY TOXIC PESTICIDES IN KIRINYAGA COUNTY



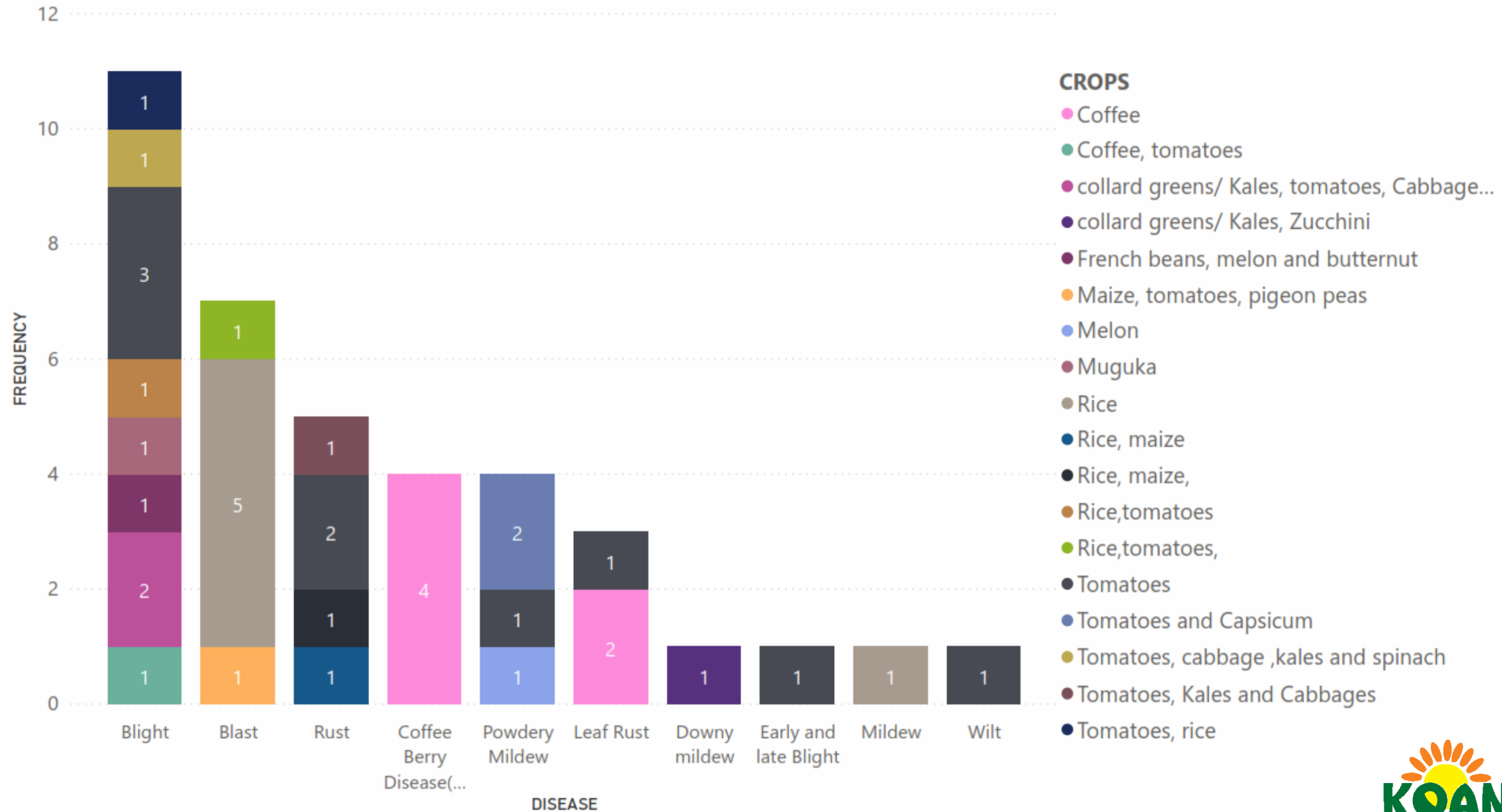
FUNGICIDES USED BY COUNTY



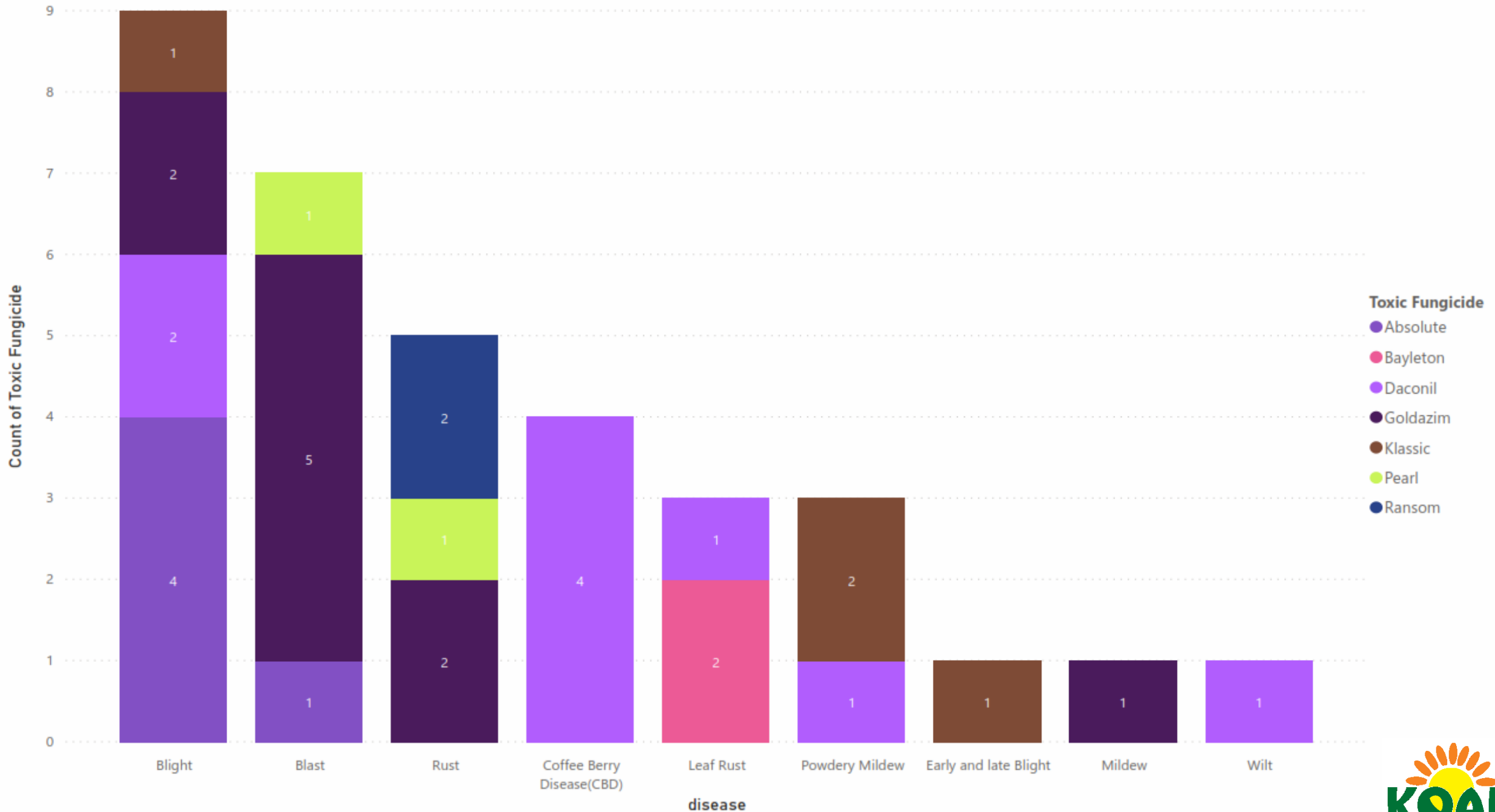
TOXIC FUNGICIDE USE BY COUNTY



CROP DISEASES AND TOXIC FUNGICIDES

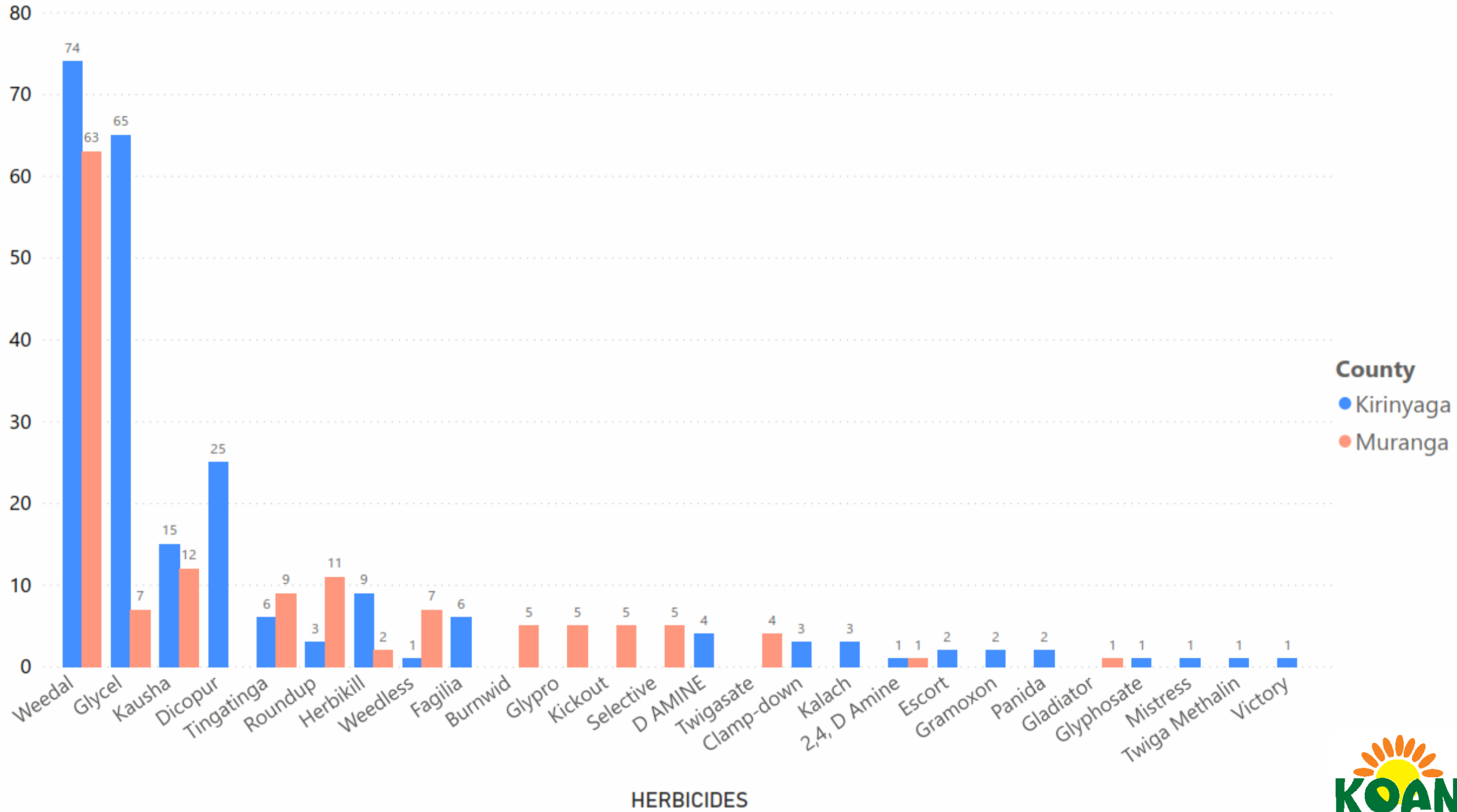


Crop Diseases by Toxic Fungicide in Kirinyaga County



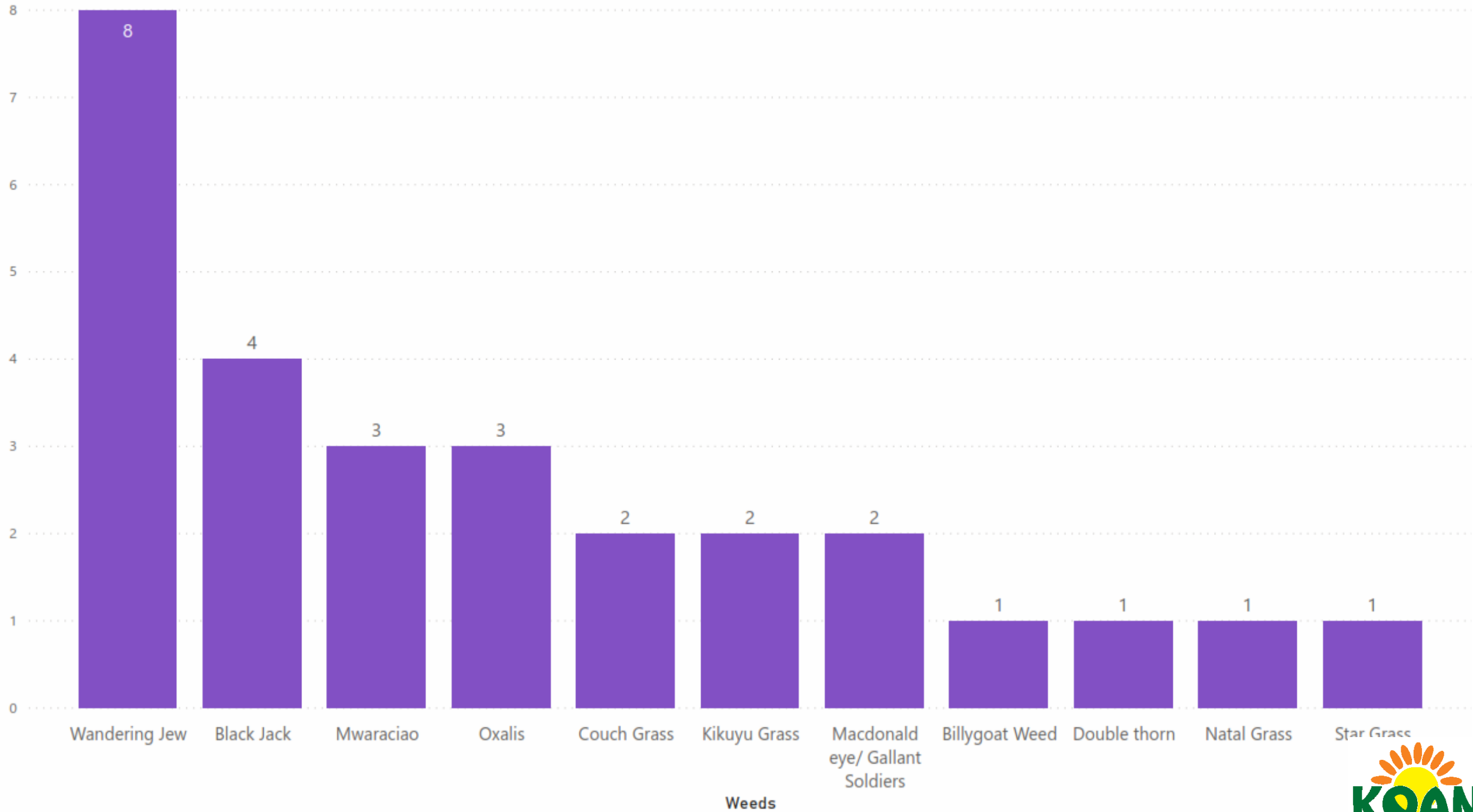
HERBICIDE USE BY COUNTY

COUNT OF HERBICIDES USED



TOXIC HERBICIDE USE BY WEEDS IN KIRINYAGA COUNTY

COUNT OF TOXIC HERBICIDE



Effects of toxic pesticides

- 45 have been proved to be carcinogenic (cancer causing)
- 31 are mutagenic (affect the genetic make up)
- 360 have effects on the reproduction system including and not limited to causing infertility
- Toxic towards aquatic ecosystem including fish
- Toxic to pollinators such as bees and have been associated with reduced bee populations.

TRADE REASONS

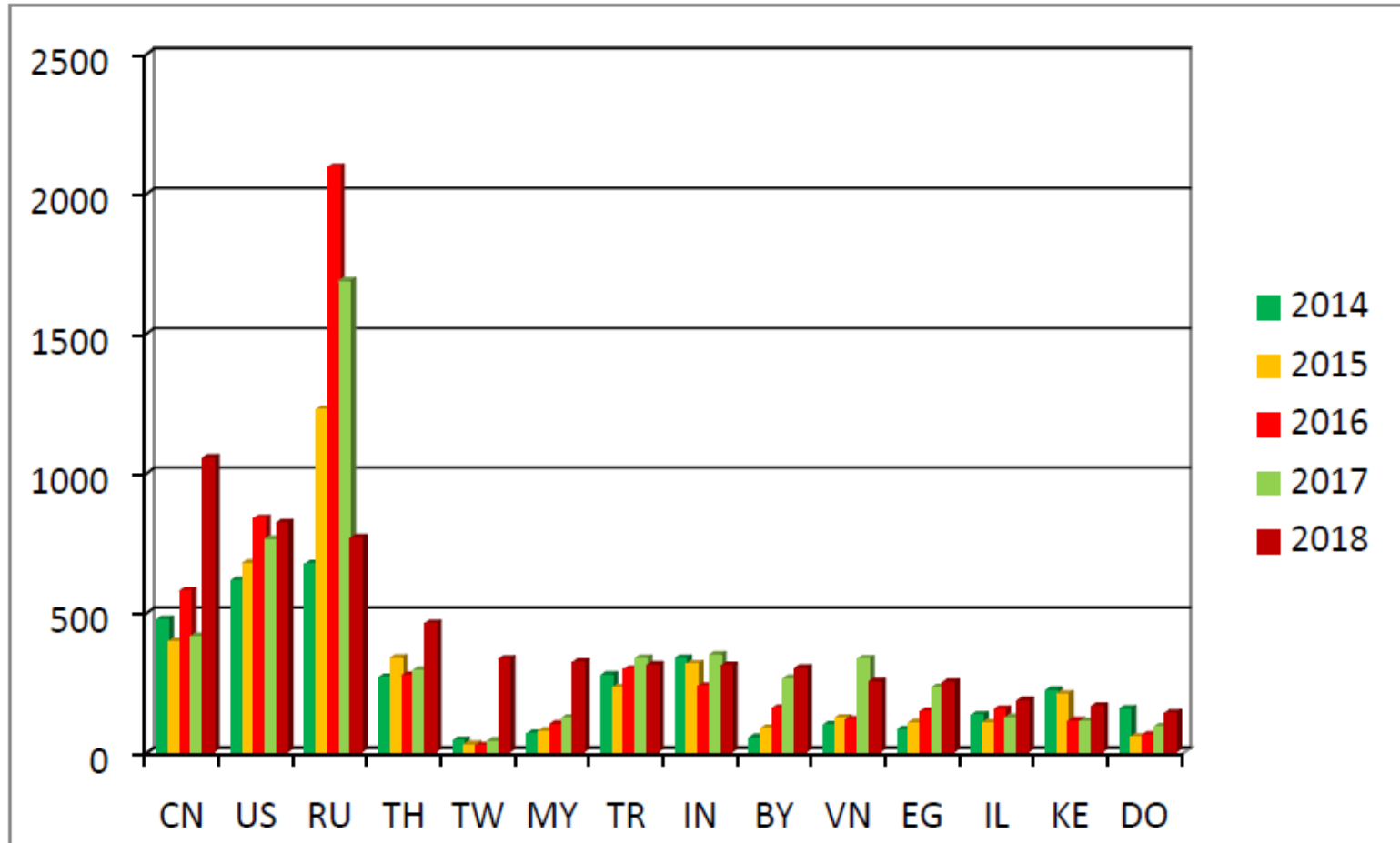
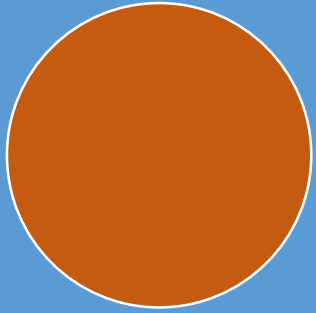
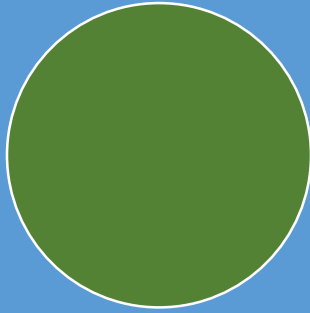


Fig. 3.2. Non-EU countries with the highest number of interceptions (all reasons) (2014-2018).

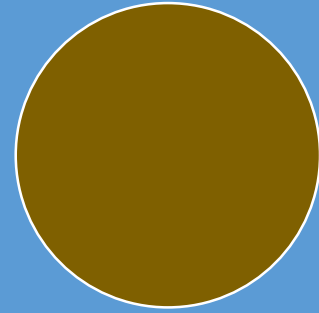
Intervention areas



Safe pesticide
use



Adopting safe
alternatives



Regulations



Intervention Areas

Safe pesticide use

- Capacity building
- Standardization
- Use of PPEs
- Monitoring

Adopting safe alternatives

- Capacity building on use of database
- Awareness
- Demonstration/field days

Regulation

- Sale, distribution of pesticides
- PHI's and use of PPE's
- Extension system approaches
- Agrovets

Policy intervention

- The Government withdraws harmful and toxic pesticides in Kenya based on the active ingredients used, that pose serious health risks to Kenyans;
- The Government develops and implements a strategy to remove such harmful pesticides from the market, recognizing that it can take several years for products to be completely unavailable through local shops and dealers;
- The Government direct the Pest Control Products Board (PCPB) to follow the World Health Organization (WHO) and Food and Agriculture Organization (FAO) International Code of Conduct on Pesticide Management;

Contd

- The Government strengthens the monitoring system on the use of pesticides, and increases data collection on food samples in the market and the level of pesticides contained;
- The Government amends the Pest Control Products Act to include a list of pesticides that have been withdrawn from the market based on the serious health risks posed to Kenyans;
- The Government amends the Pest Control Products Act to make it mandatory for the PCPB to engage the Ministry of Health, Kenya Medical Research Institute (KEMRI) in assessing data on human health impacts during the registration and re-registration process of products.
- The Government, Civil Society Organizations (CSOs) and Private extension systems to adopts the three step approach in advising farmers on pesticide use:

Contacts

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