

**PINEVE**<sup>®</sup>

PLANT  
ANTITRANSPIRANT  
& ADJUVANT FOR  
FUNGICIDES





## NAVIGATION

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1. [INTRODUCTION](#)
2. [PINEYE® LABEL](#)
  1. [APPEARANCE](#)
  2. [APPLICATION](#)
  3. [MECHANISM](#)
  4. [EXTENSION TEST](#)
3. [DEFENSE SUN DAMAGE TEST](#)
4. [MARKET EDUCATION](#)
  1. [TARGET MARKET](#)
  2. [MARKET INSIGHT](#)
  3. [USE GUIDE](#)
  4. [CASE STUDY](#)
5. T/R ANALYSIS
  1. [WARNING LINE](#)
  2. [ENGLAND](#)
  3. [USA](#)
  4. [FRANCE](#)
  5. [GERMANY](#)
  6. [ITALY](#)
  7. [NORTH AFRICA](#)
  8. [SOUTH AFRICA](#)
9. [AUSTRALIA & NEW ZEALAND](#)
10. [BRAZIL](#)
11. [AGENTINA](#)
12. [RUSSIA](#)
13. [EASTERN EUROPE](#)
14. [WORLD](#)



## INTRODUCTION

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PINEYE® Emulsion is plant adjuvant product derived from pine trees, highly contains natural ingredients, such as **di-1-p-menthene** or **poly-menthene**. It's the *non-ionic* type plant surfactant (it was also known as plant spray sticker). The liquid is easy blending with water, ready for on-land sprayers and aerial spraying.

Due to the sticky and extension properties, PINEYE® Emulsion is forming an elastic coating on the surface of foliage and fruits. The coating will reduces vapor drift on the aerial application, or the washing on a heavy rain. Saving the amounts of fungicides and pesticides. Increasing the ROI for farmers and growers.

Comparing with the traditional silicon-based adjuvants. PINEYE® Emulsion also effects the **botanical broad-spectrum antimicrobial activity** and pests control ability.

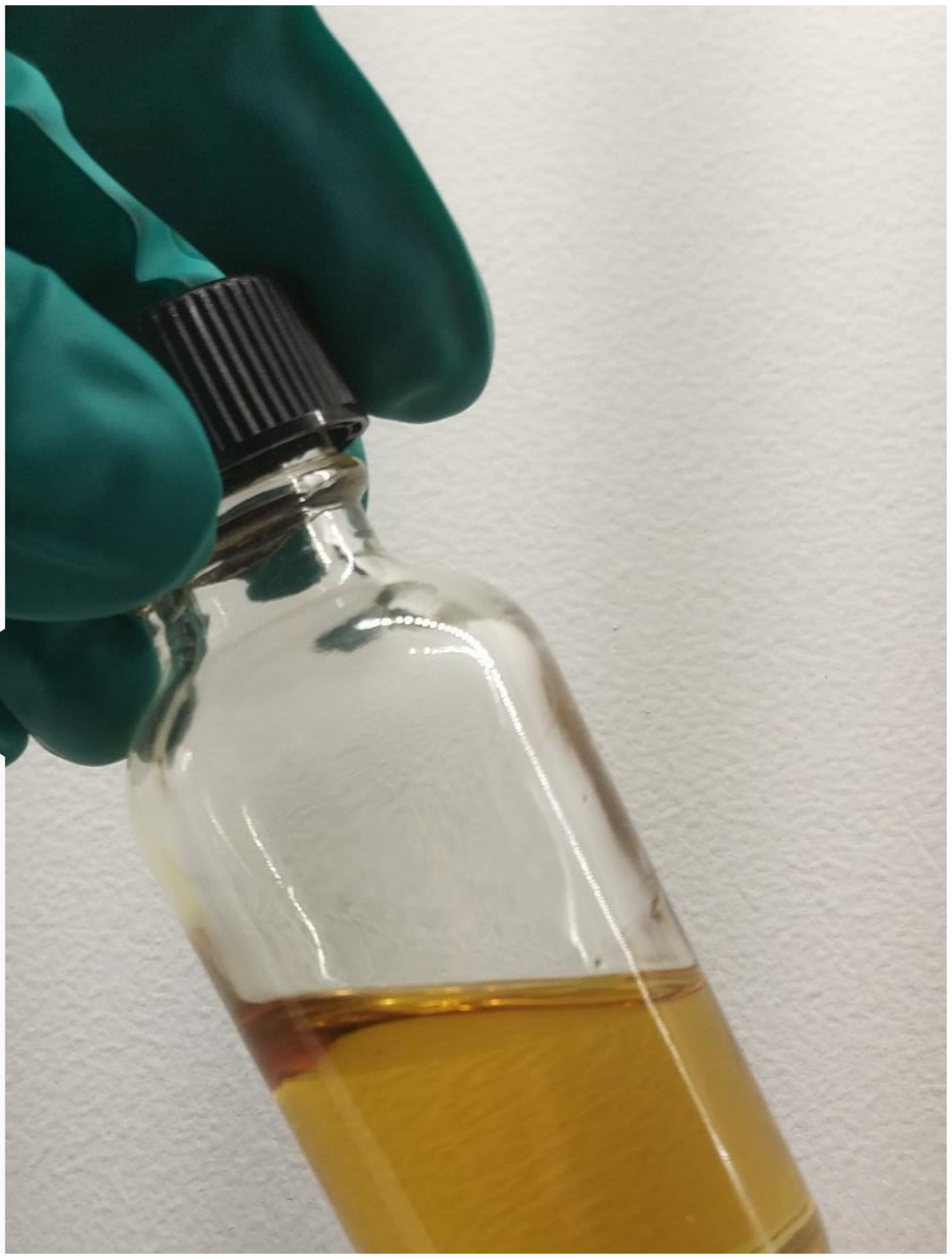




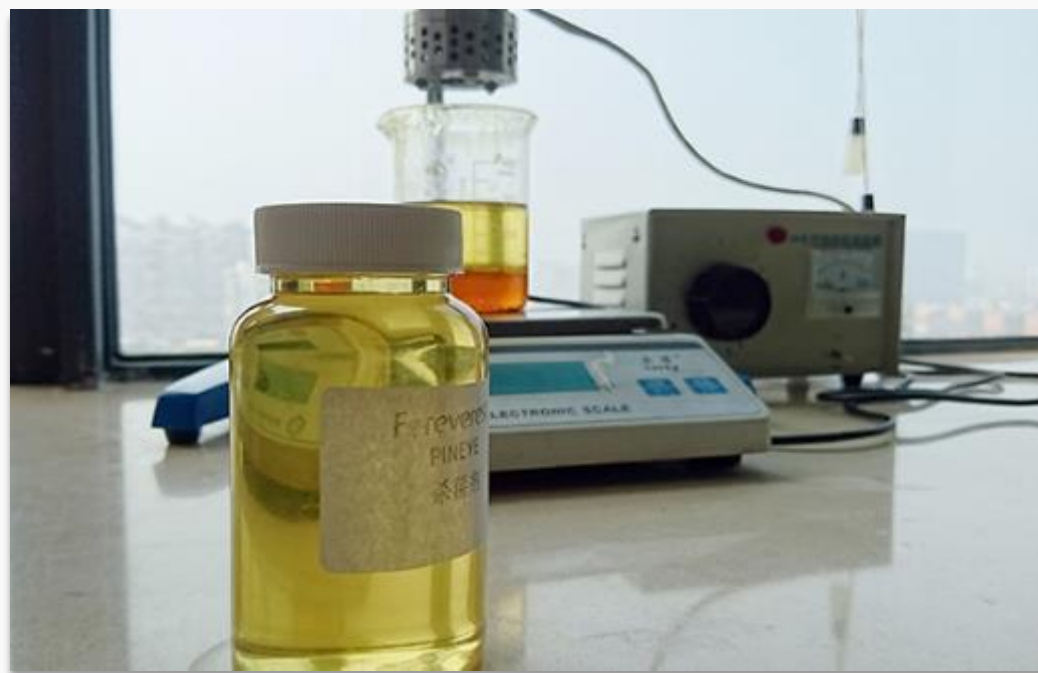


PINEYE® LABEL

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## APPEARANCE



- PINEYE® Emulsion appears viscous yellow brown liquid.



## APPLICATION



### Wetting & Extension – Used as wetting agent

PINEYE® Emulsion can wet H<sub>2</sub>O and fungicides (or pesticides) for increasing the extended area on the surface of foliage and fruits. Assists farmers and growers spraying agrochemicals at a low volume for saving money.



### Reduces water evaporation – Used as antitranspirant adjuvant

PINEYE® Emulsion will form a coating on the plant surface. It affects the open stomata and influences the transpiration rate of plants.



### Sticky & Release control – Used as potentiator

The sticky and adhesion properties improve the initial accumulation of fungicides (or pesticides) and strengthen the microencapsulated effect.

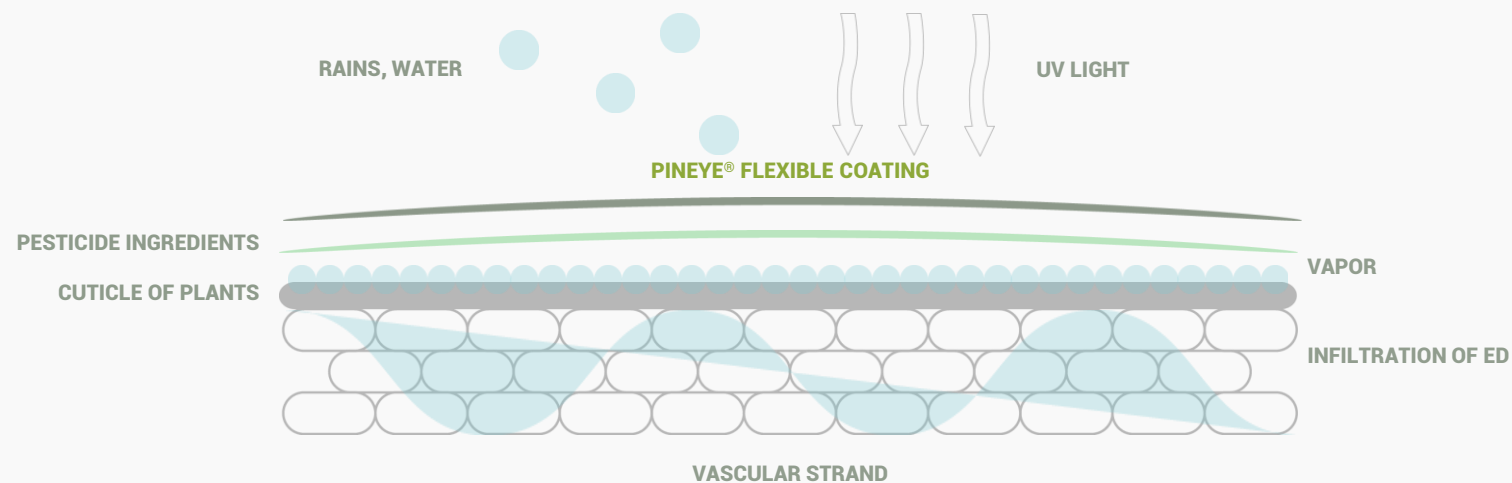


### Defense sunburn – Used as plant sunscreen

The organic elastic film can effectively reduce the sun damage from UV light and high temperature. Protect the harvest, avoid plants and fruits browning or necrosis.



## MECHANISM

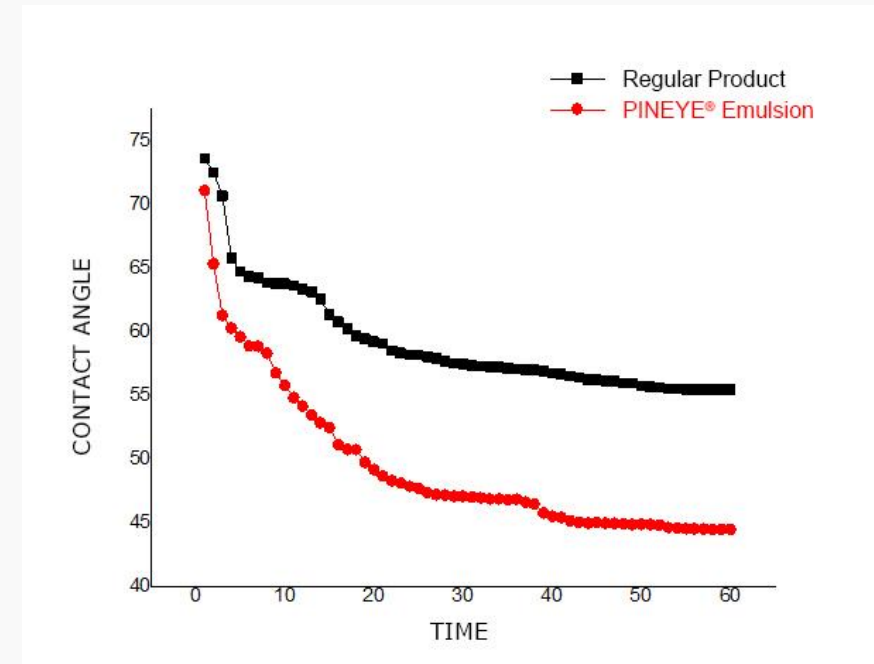
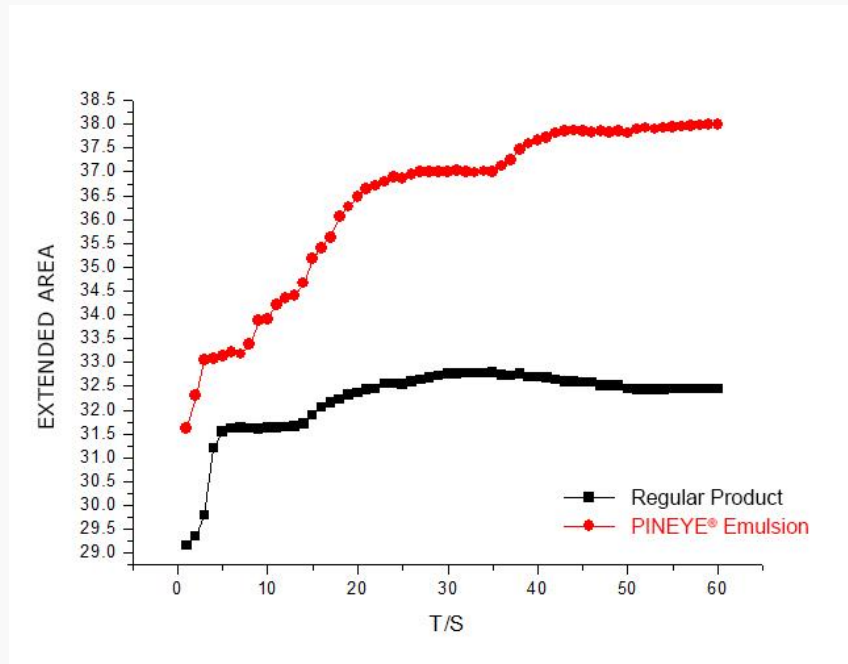


- PINEYE® Emulsion is prepared from natural composition of pine trees, has phytochemical actives. The emulsion forms organic flexible film and this coating is friendly and compatible with hairy and waxy blade surface.
- The film influences the activities and numbers of plant's stoma for reduce water loss.
- The film also improves extended area and contact angle of agrochemicals with the plant's surface.





## EXTENSION TEST





TEST

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## SUNBURN DEFENSE TEST



- 1**
- PINEYE® Emulsion (the right sample) appears lightly yellow color before mix with water or fungicides. It is a nonionic type organic adjuvant.

- 2**
- PINEYE® Emulsion can be soluble in water. It appears white color after blended.



## SUNBURN DEFENSE TEST



### 3

- PINEYE<sup>®</sup> Emulsion has the film-forming property, it will form an elastic coating on the surface of plant. The ingredients of key phase are extracted from plants, and show the friendly bioactive and help fungicides access the hairy blade and waxy blade of foliage surface.



## SUNBURN DEFENSE TEST

**4**

- A plant sun guard test at noon @26°C on Jun.6, 2016. Two samples (the left and middle one) were treated with antitranspirant liquid and a leaf (the right one) without adjuvant. They were sprayed and placed for 6 hours and then moved into the room for 15 hours. The foliage treated with adjuvant is green and fresh after picked for 21 hours. PINEYE<sup>®</sup> Emulsion (the middle one) reduces the transpiration property of plants and locks the water.



## SUNBURN DEFENSE TEST

**5**

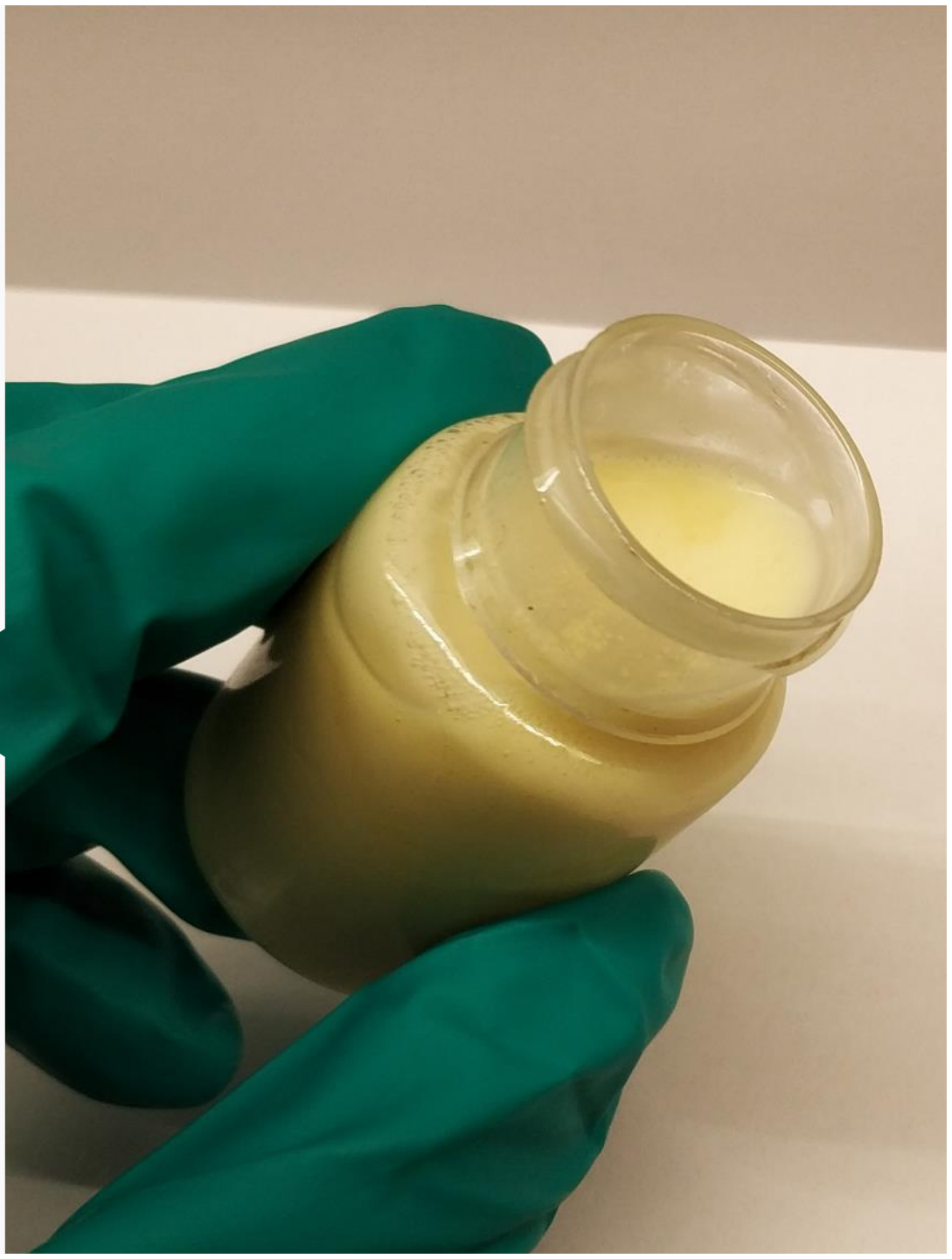
- For 3 hours placed under the sunlight directly in the afternoon on Jun.7, 2016. The foliage samples were hurt by sunlight. The right leaf sample without adjuvant showed a large area wilting. The middle one treated by PINEYE<sup>®</sup> Emulsion withered by sunlight at the smaller area. Compared with the left one treated by the competitor. It showed a tangible result.







MARKET EDUCATION





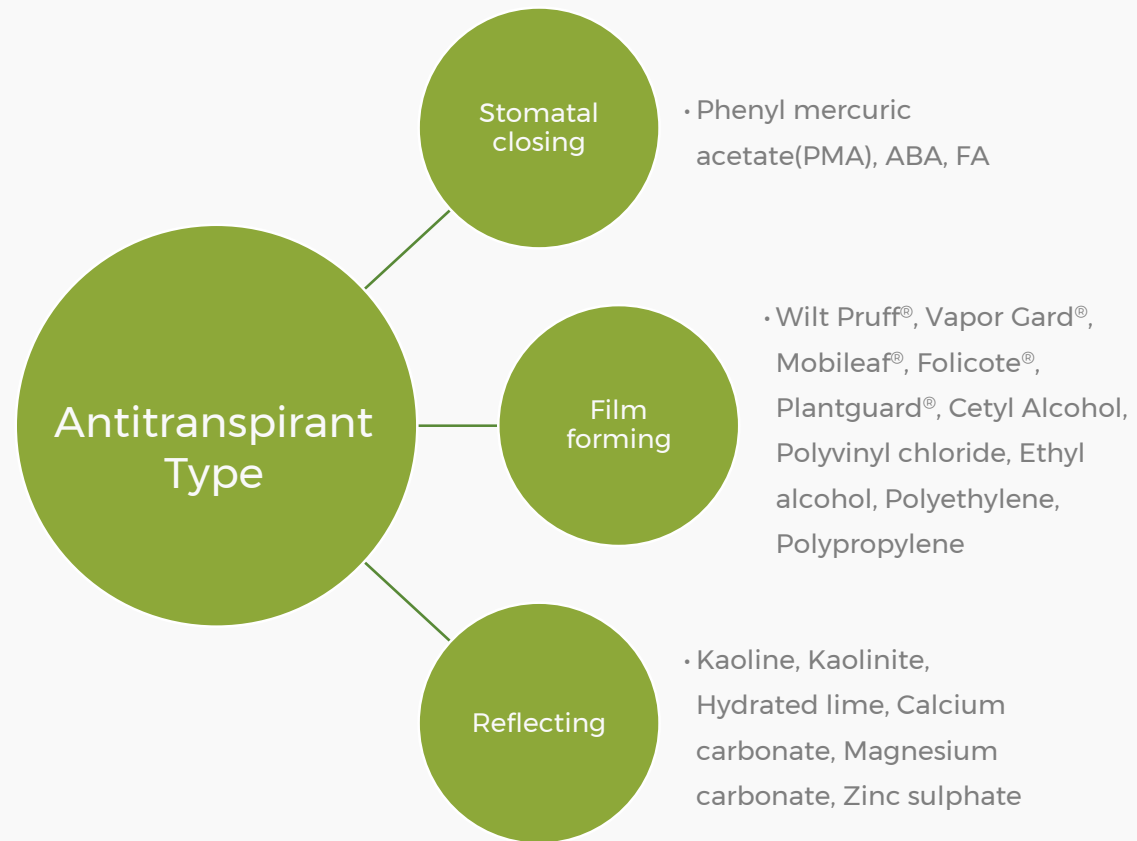
## TARGET MARKET

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- Plant care chemicals
  - Fungicide
  - Herbicide
  - Insecticide
  - Seed & Biotech
  - Adjuvant
    - Biobased adjuvant
      - Antitranspirant
      - Wetting Dispersant
      - Surfactant
      - Potentiator
- Fertilizer
- Micronutrient



MARKET INSIGHT





## PINEYE® Emulsion Guideline

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### Used for spraying

- Monthly rainfall average value below at 50 mm, used as wetting agent and adjusts the evaporation rate of plants.
- Monthly temperature average value above at 30°C and the rainfall avg. value below at 30 mm, used as antitranspirant to reduces water loss, defenses UV light and sunburn damage.
- Monthly rainfall avg. value above at 150 mm, used as extender and spray sticky for increase the adhesion of agrochemicals with plant surface.

### Used for blending with fungicides

- Relative humidity value above at 60% and the temperature between 4 to 30°C, used for the early stage plant diseases prevention.
- Monthly temperature average value between at 4°C to 32°C, the rainfall value between 30mm to 200mm, used to prevents the growth of mycelium of spores.
- Monthly temperature avg. value between at 13°C to 27°C, and the rainfall value between 30mm to 200mm, used for prevents the spread and infection of plant diseases.





## PINEYE® Emulsion Guideline

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Application	Mixed Ratio
Sticking & Release Control	300 to 400 ml/ha
Advanced Sticking & Release Control	400 to 600 ml/ha
Wetting & Dispersant	300 to 400 ml/ha
Advanced Wetting & Dispersant	400 to 600 ml/ha
Extending & Potentiating Agent	600 to 1200 ml/ha

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## PINEYE® Emulsion Guideline

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### CASE 1

If you want to use PINEYE® Emulsion as wetting dispersant agent on your citrus garden, the irrigation of water is 400 L/ha, you should use the following equation:

*350 (referenced the ratio) \* 170 (if net weight of spreader is 170L) / 400 (the irrigation of water) = 148.75ml*

### CASE 2

If you want to use a stronger effectivity from PINEYE® Emulsion on your citrus garden, the irrigation of water and net weight of spreader as same as Case 1, you should use the following equation:

*600 (referenced the ratio) \* 170 (if net weight of spreader is 170L) / 400 (the irrigation of water) = 255ml*

Compared Case 2 with Case 1 at the same citrus garden, you should get a stronger effectivity from PINEYE™ Emulsion when you increase the ratio of adjuvant.

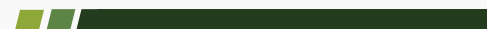
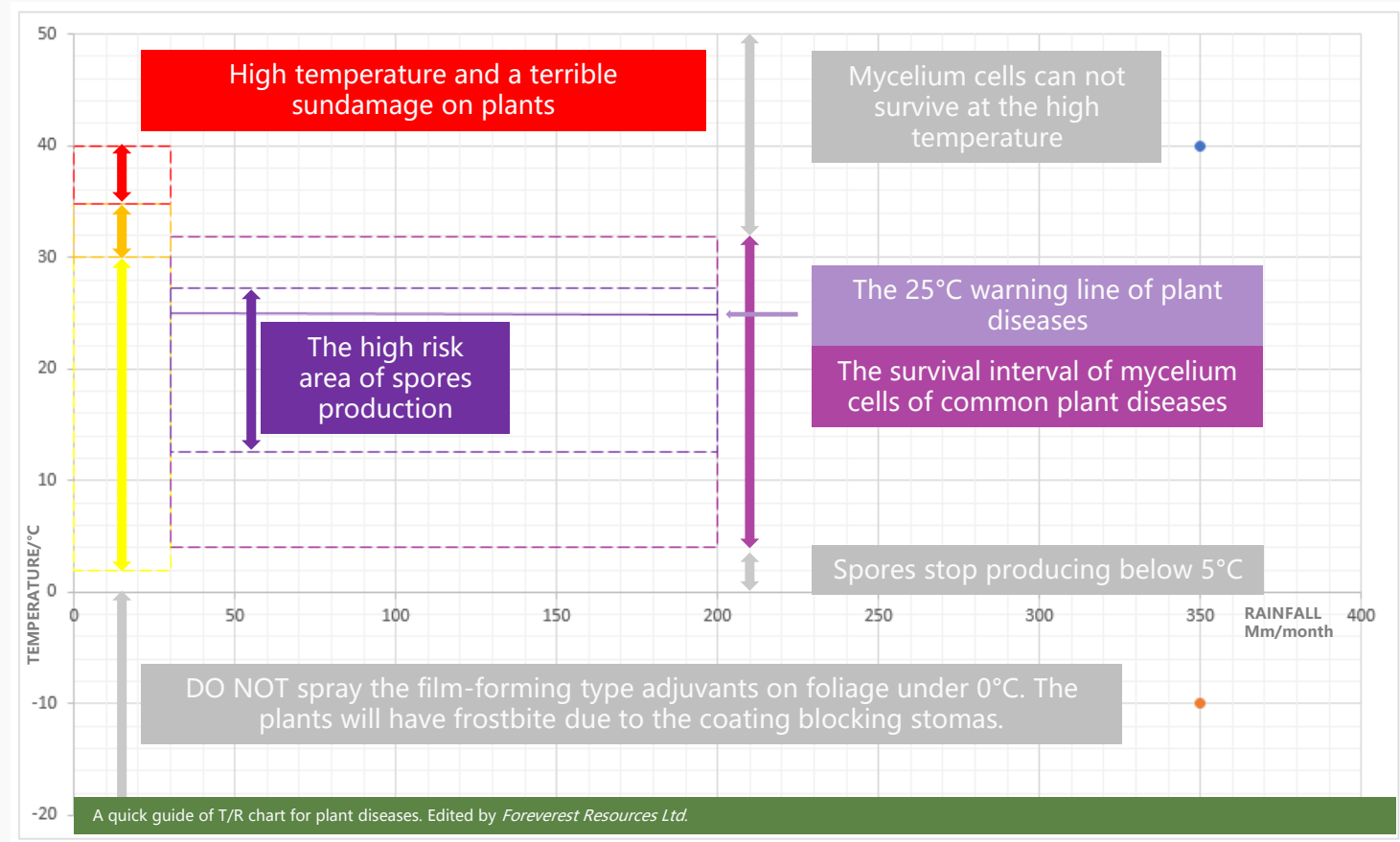




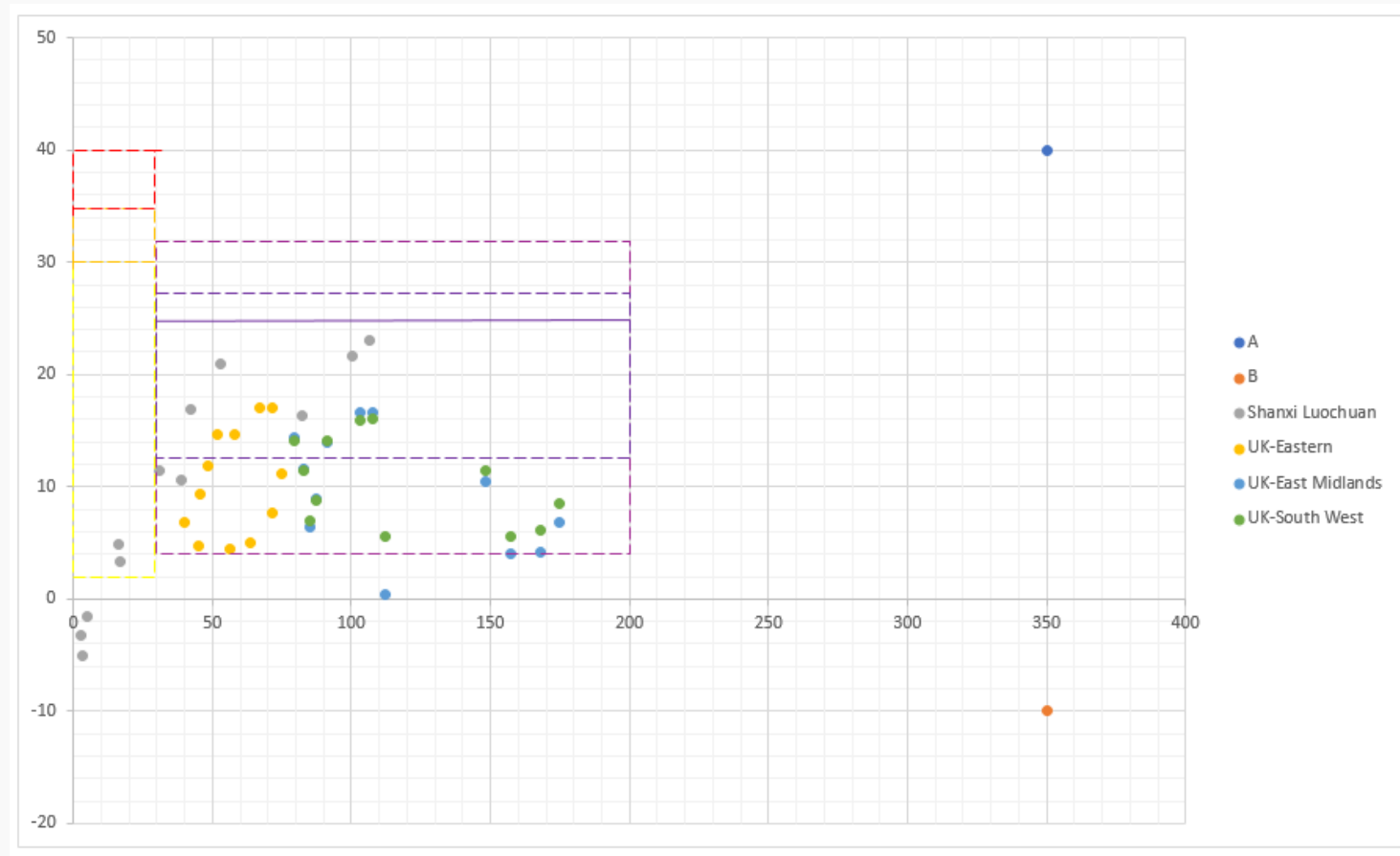
### T/R ANALYSIS OF MAIN AGRICULTURE AREAS

Dryer and Hotter, plants are easy burning by sunlight and UV light

A high transpiration ratio of plants with the temperature is increasing



## T/R ANALYSIS OF ENGLAND MAIN AGRICULTURE AREAS

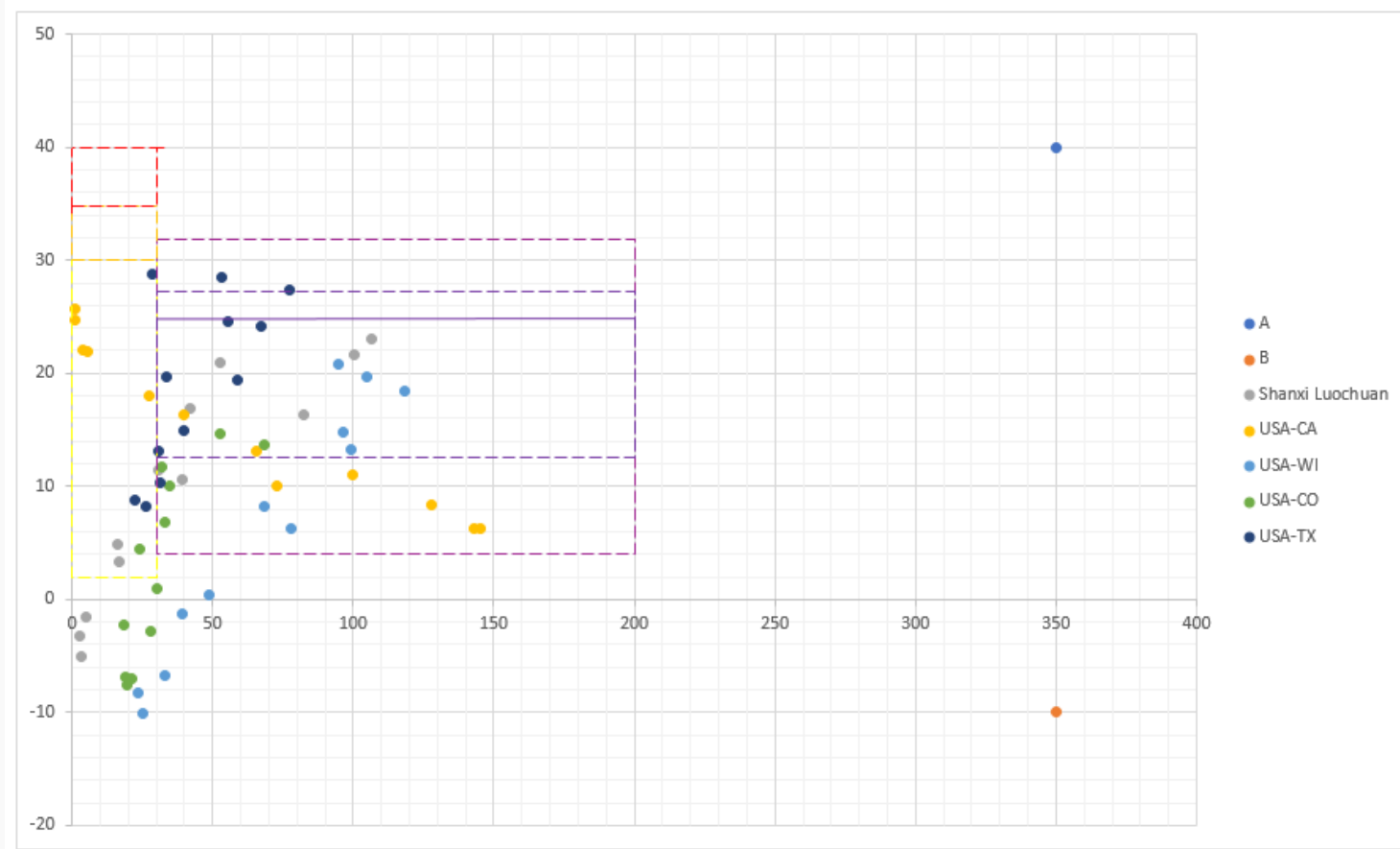


\*DATA RESOURCR : 1901-2015 Country Historical Climate of The World Bank Group  
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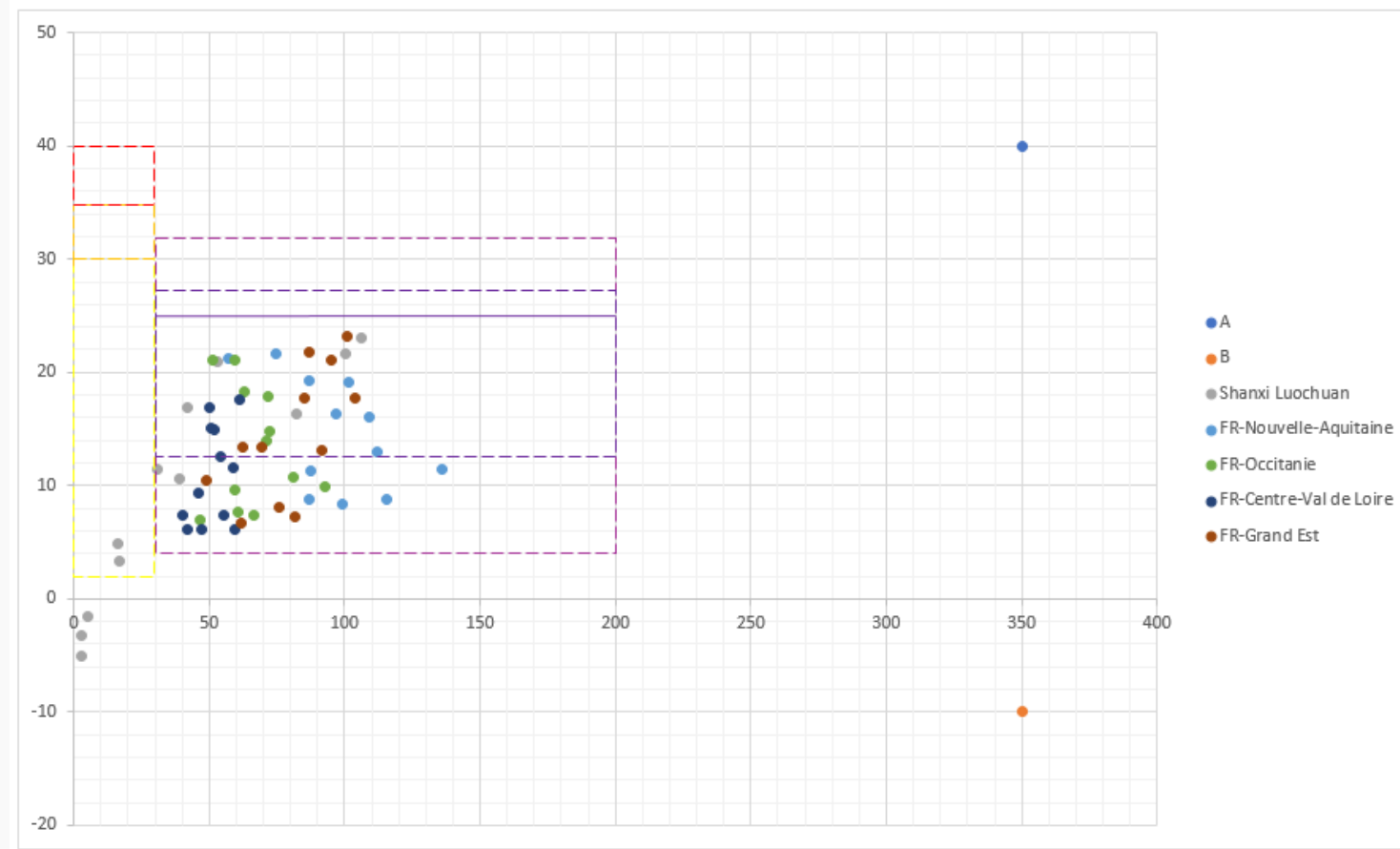
### T/R ANALYSIS OF USA MAIN AGRICULTURE AREAS



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## T/R ANALYSIS OF FRENCH MAIN AGRICULTURE AREAS

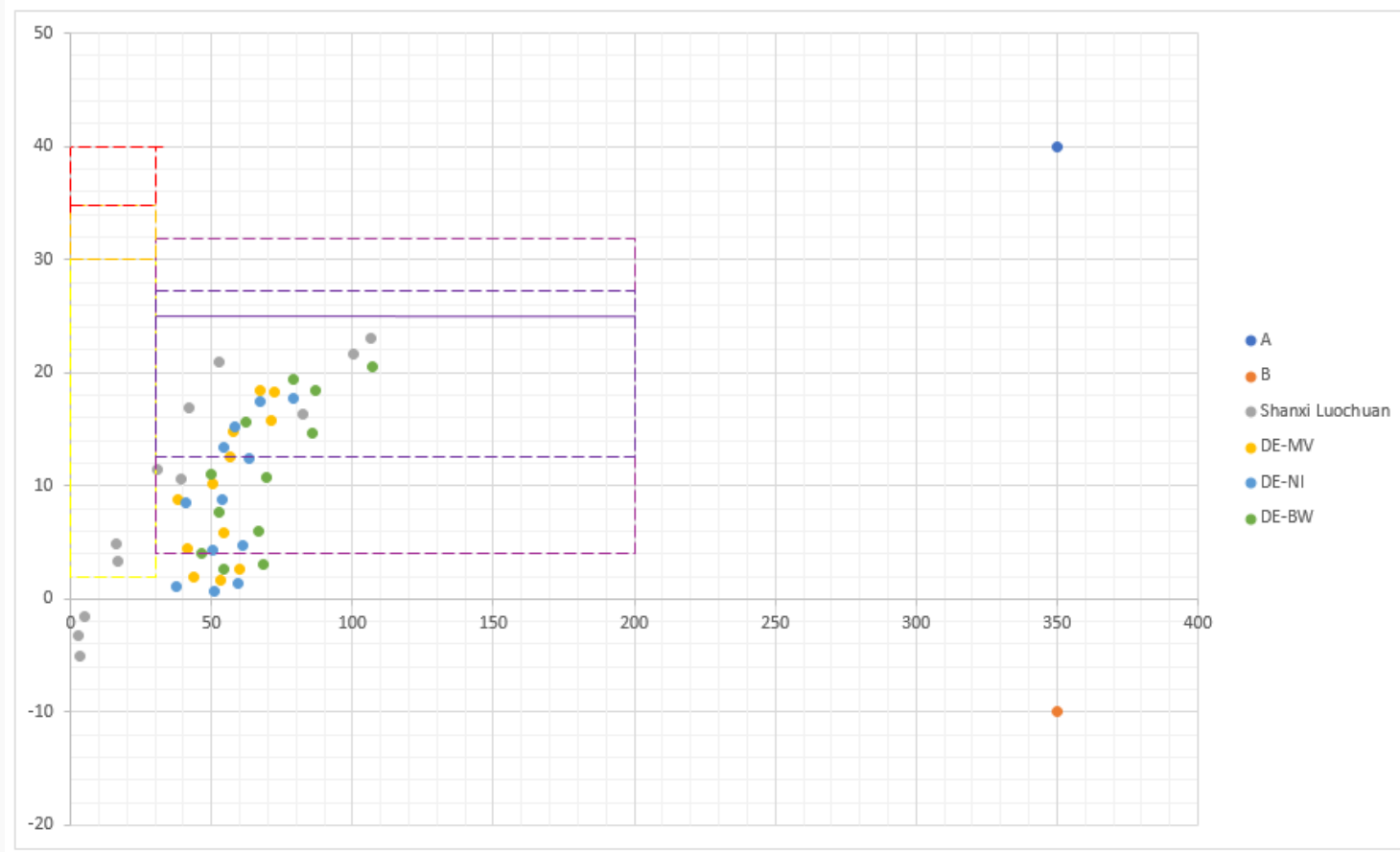


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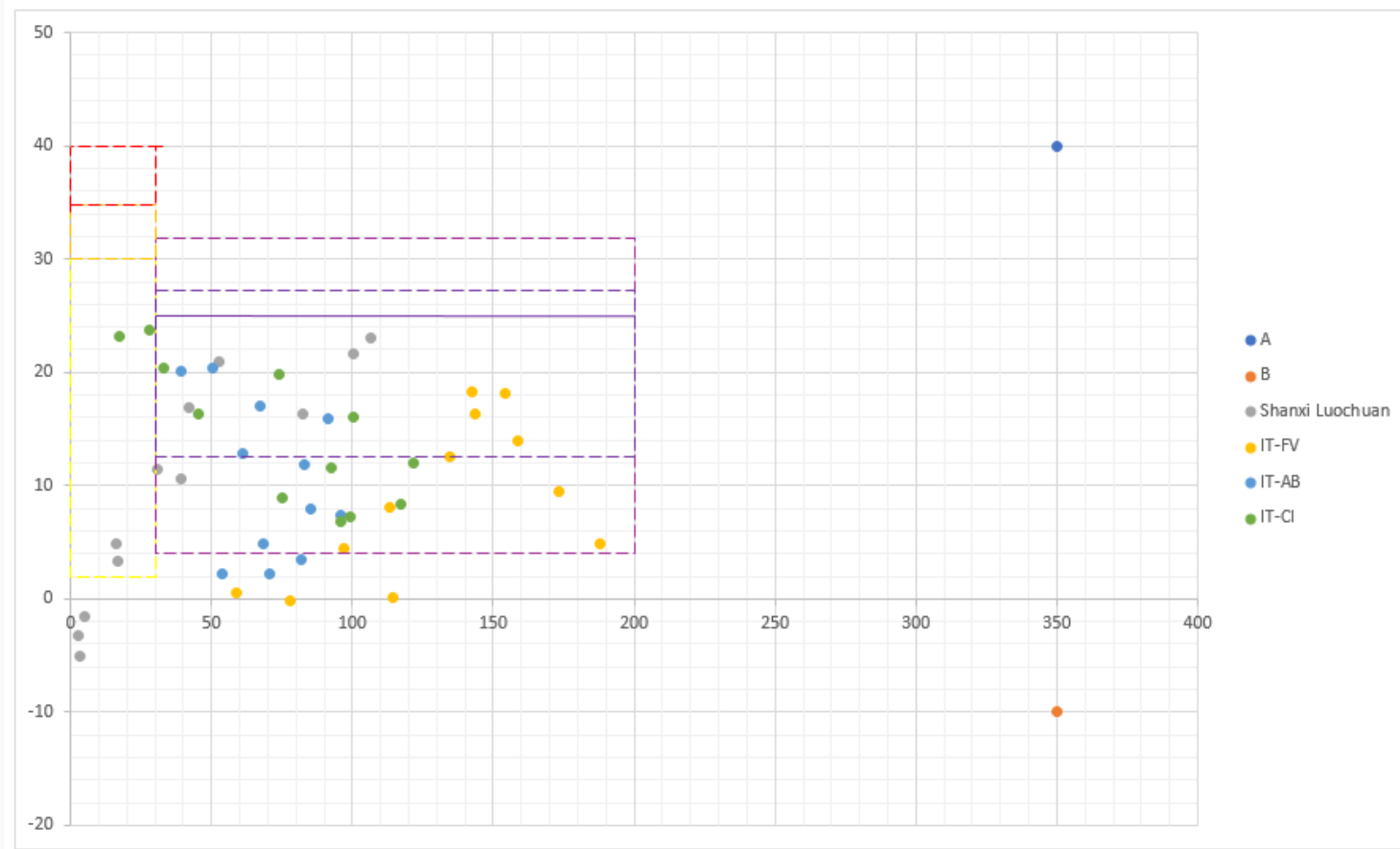
## T/R ANALYSIS OF GERMAN MAIN AGRICULTURE AREAS



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## T/R ANALYSIS OF ITALY MAIN AGRICULTURE AREAS

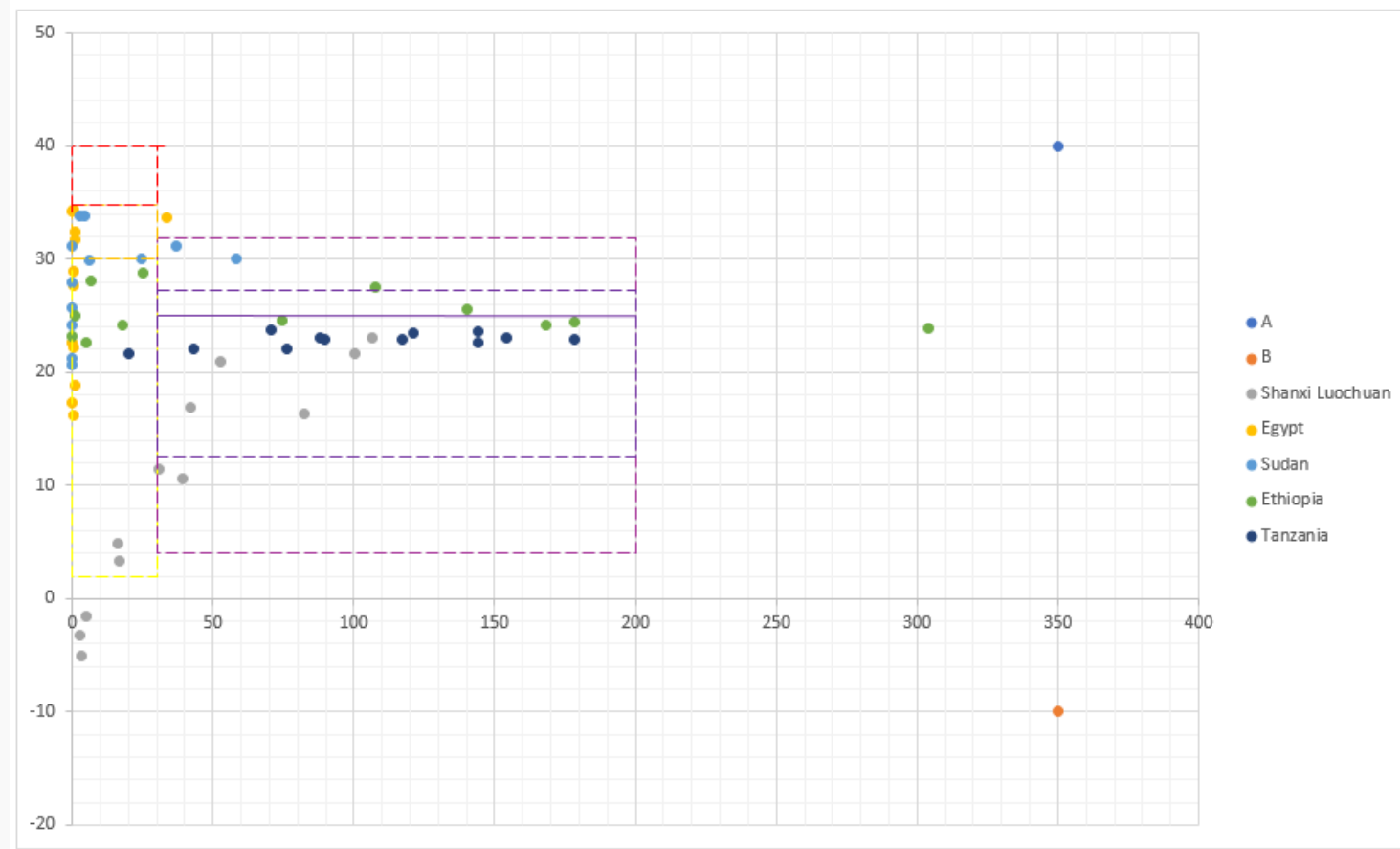


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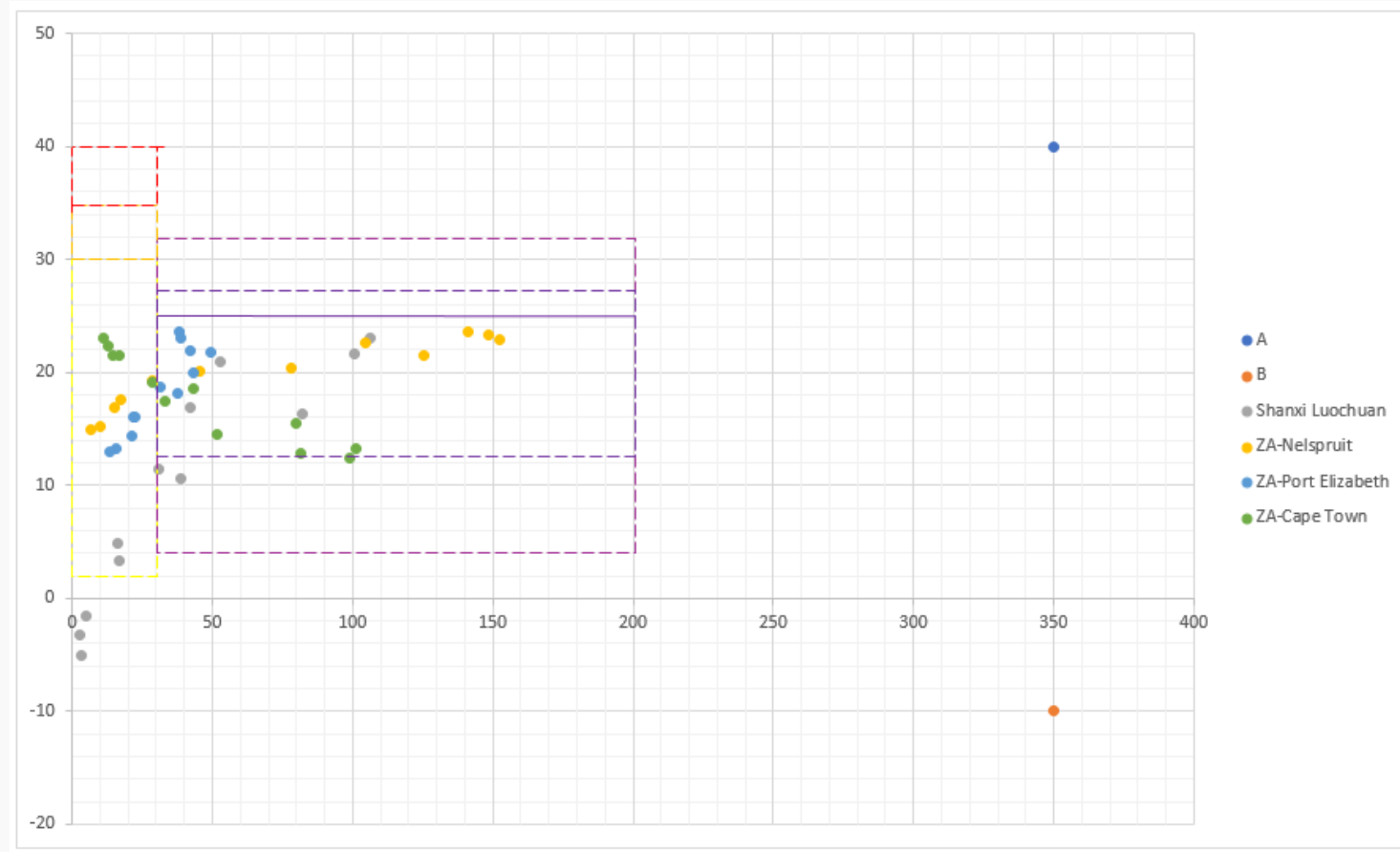
## T/R ANALYSIS OF NORTH AFRICA MAIN AGRICULTURE AREAS



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## T/R ANALYSIS OF SOUTH AFRICA MAIN AGRICULTURE AREAS

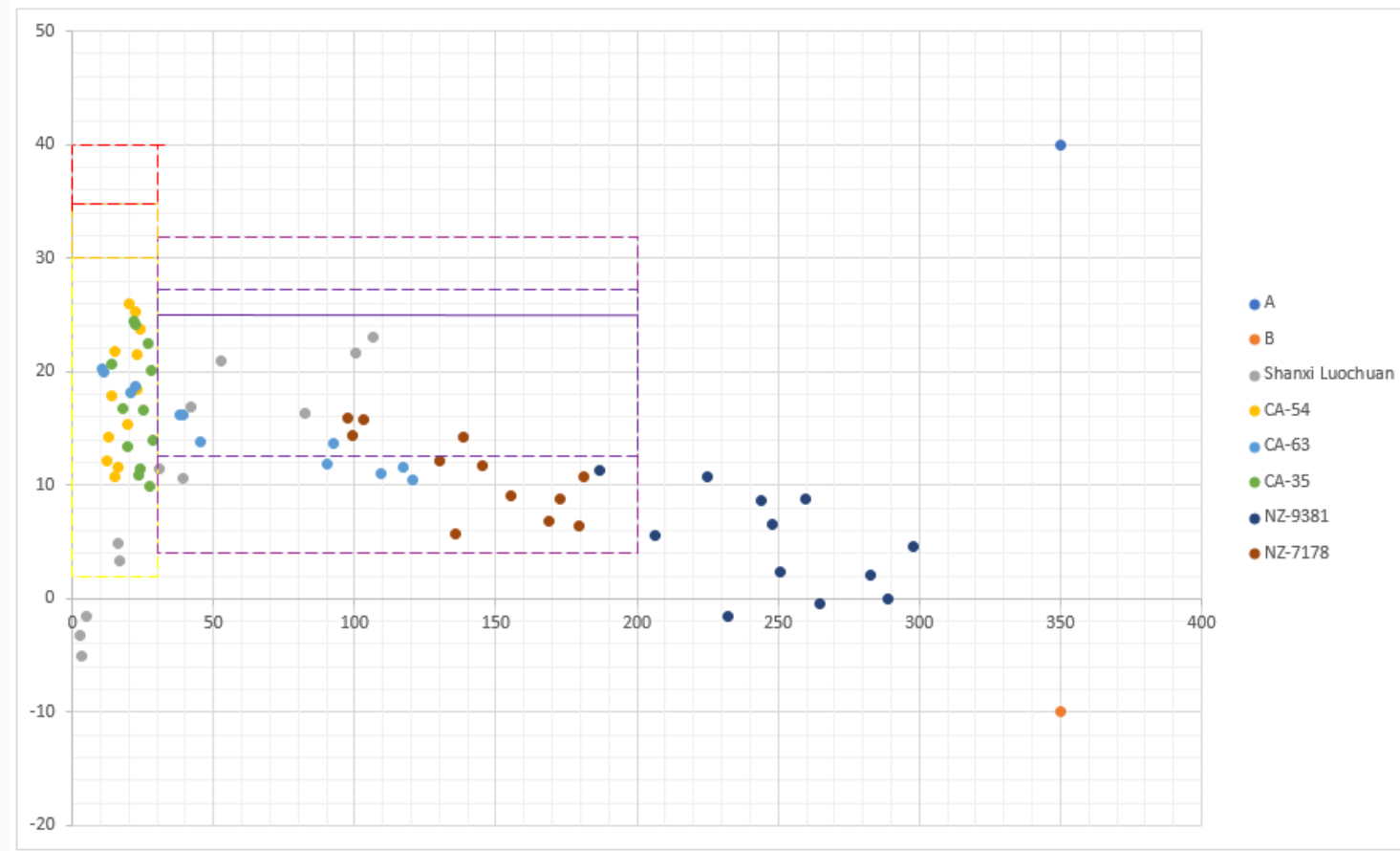


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## T/R ANALYSIS OF AUSTRALIA & NEW ZEALAND MAIN AGRICULTURE AREAS

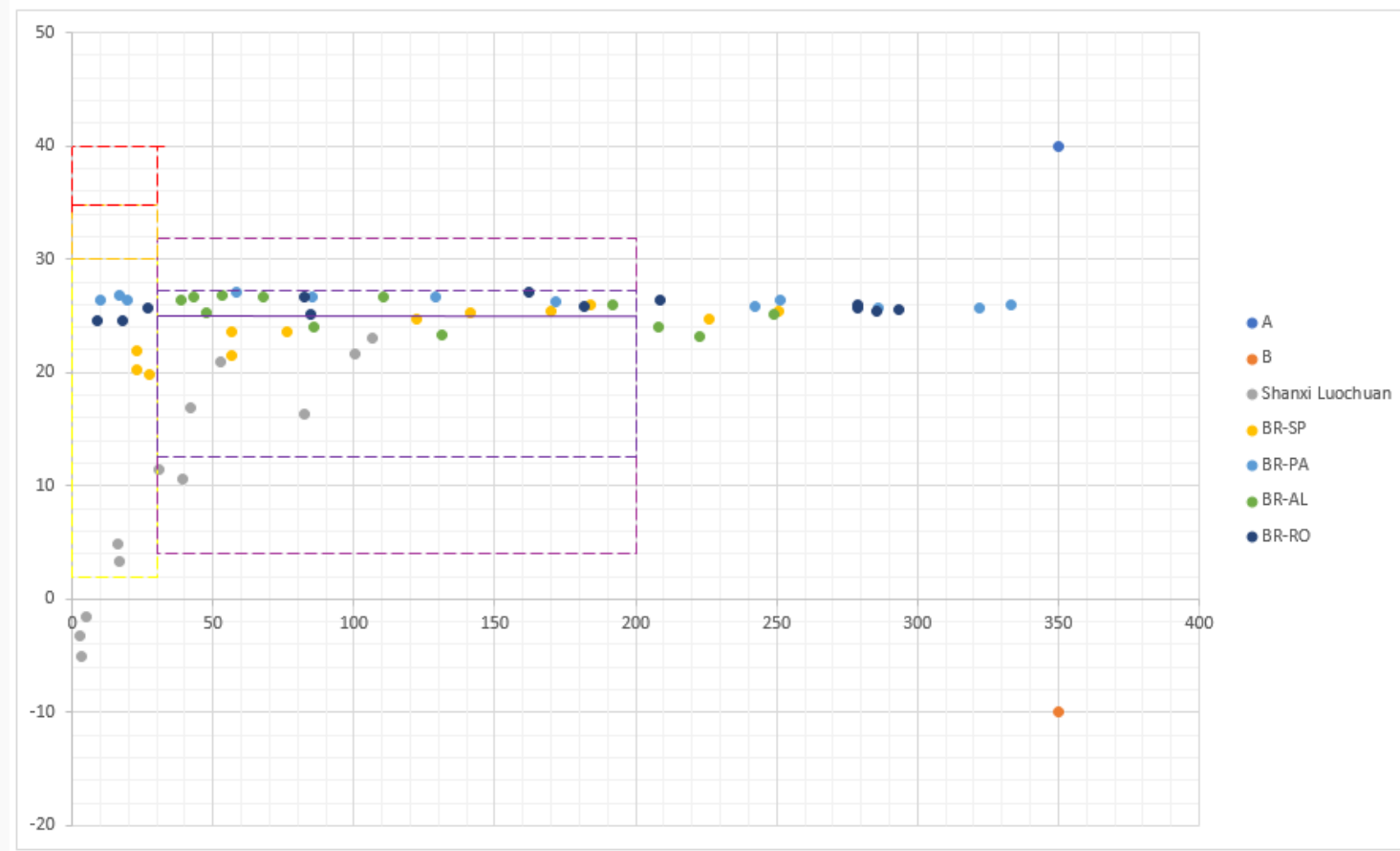


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## T/R ANALYSIS OF BRAZIL MAIN AGRICULTURE AREAS

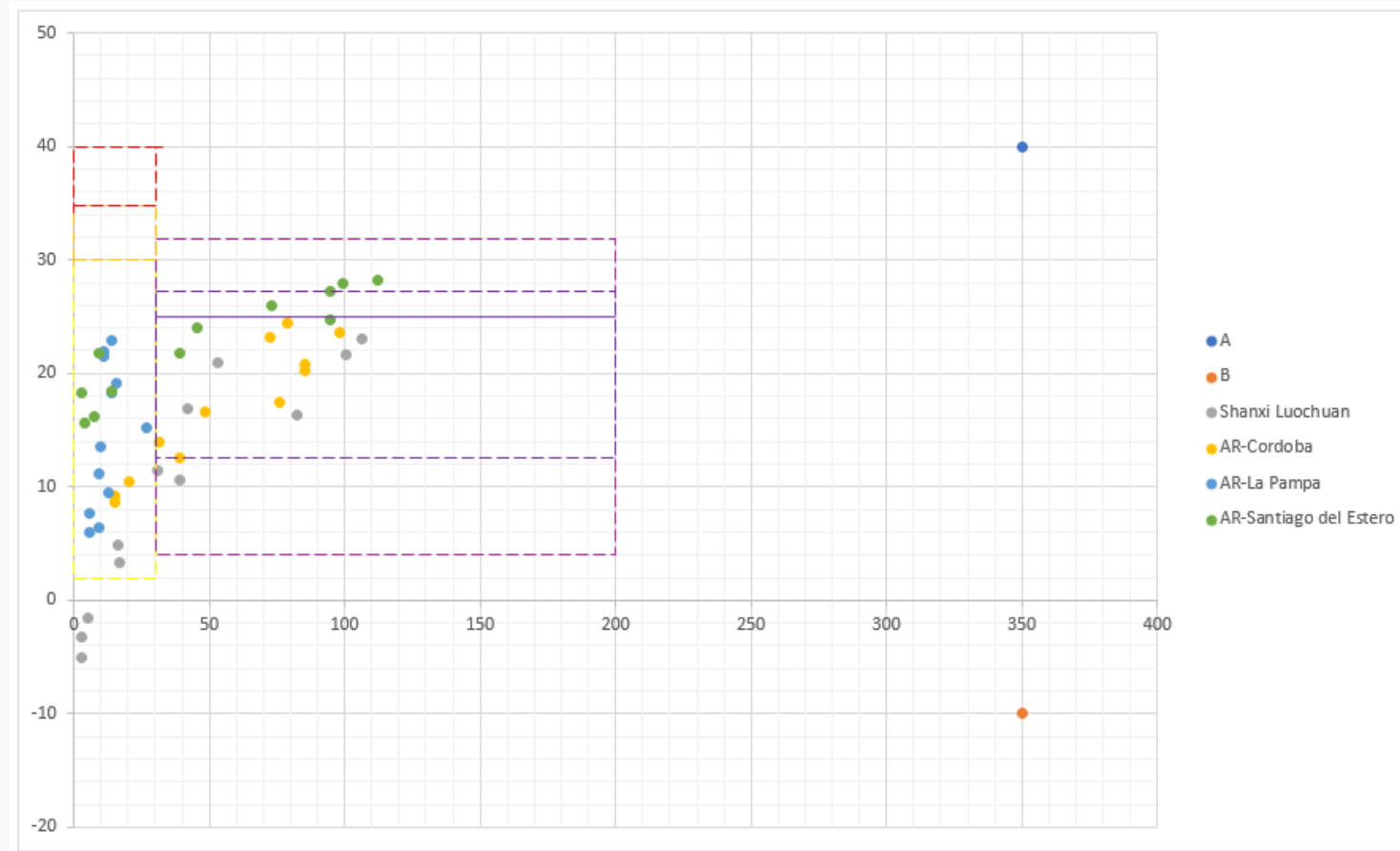


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## T/R ANALYSIS OF ARGENTINA MAIN AGRICULTURE AREAS

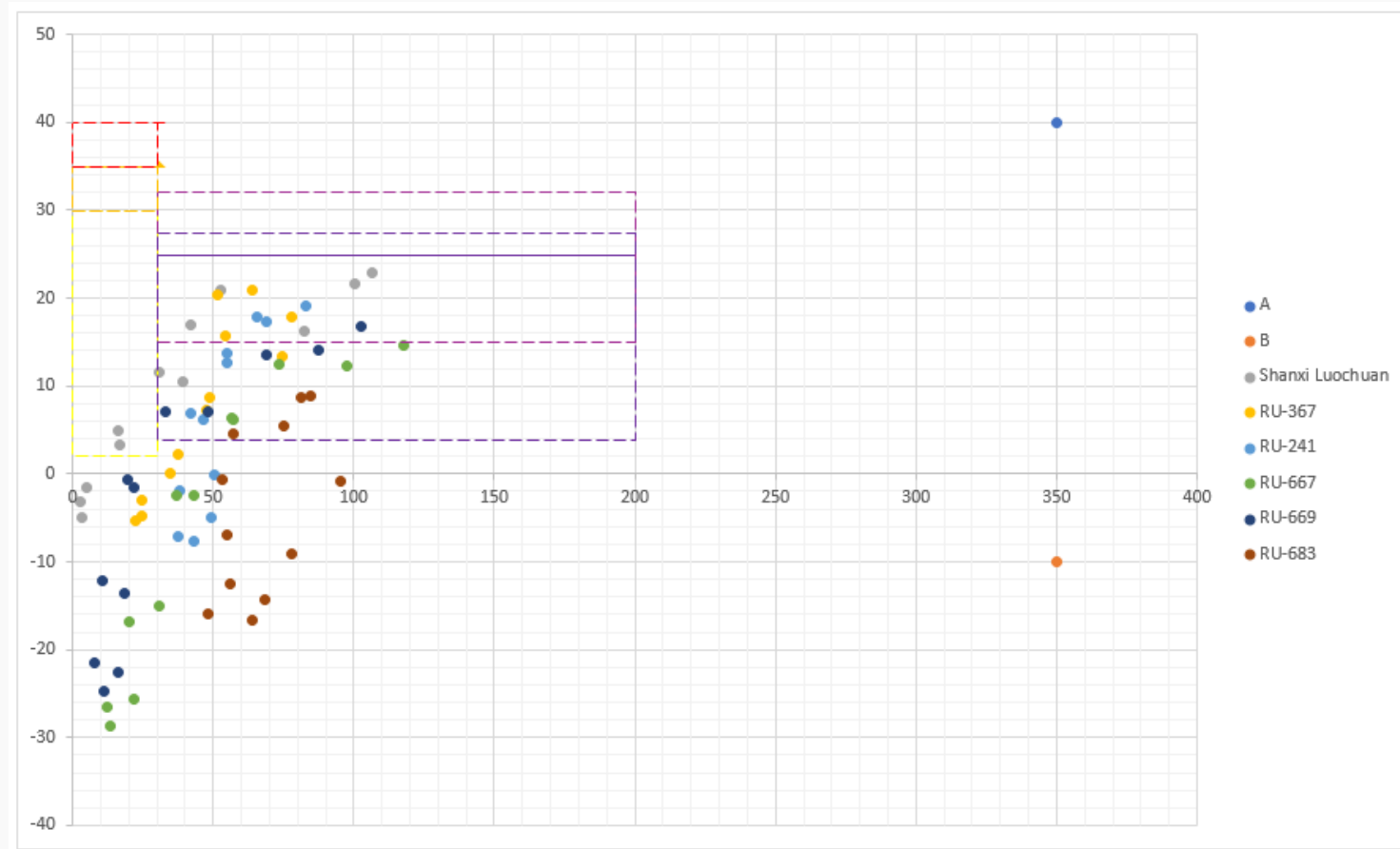


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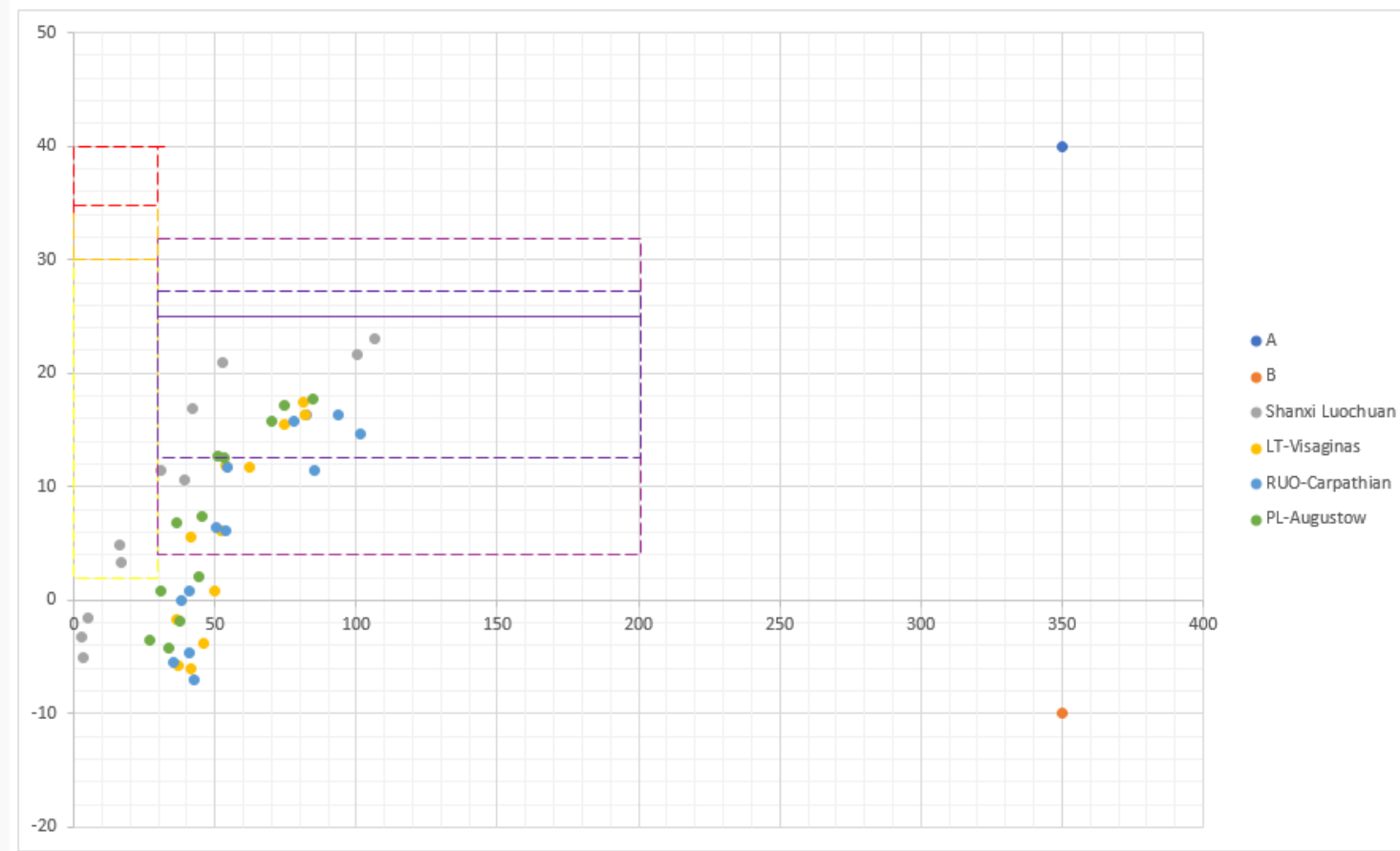
## T/R ANALYSIS OF RUSSIA MAIN AGRICULTURE AREAS



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## T/R ANALYSIS OF EASTERN EUROPE MAIN AGRICULTURE AREAS

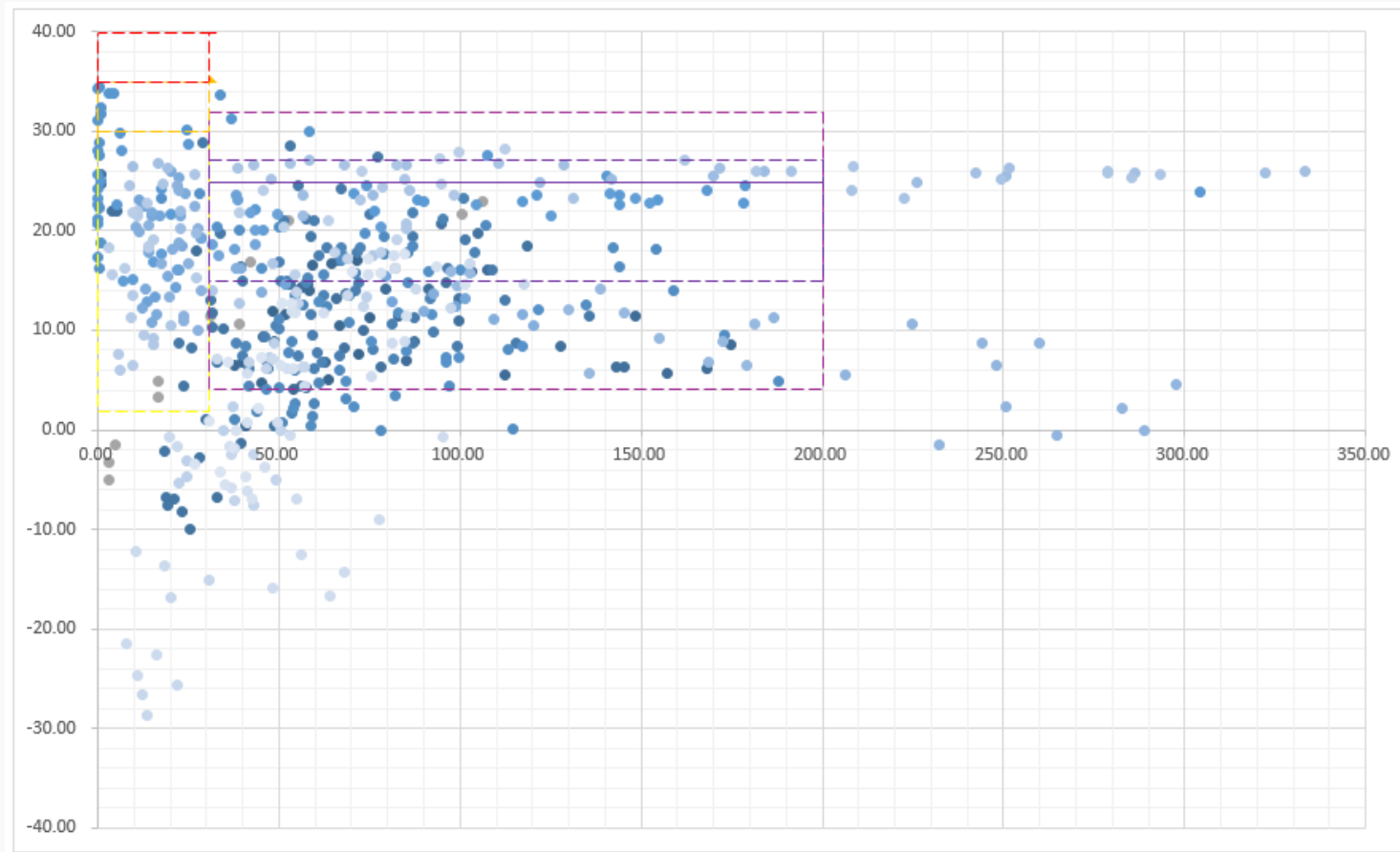


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**Foreverest Resources Ltd.** is a family-owned company, which specializes in pine chemicals and provides reliable and comprehensive solutions for pre-sale & after-sale services. With 30 years of history in R&D of forest chemicals products in China, we focus on supplying the substitutes of natural products. Our products include modified resins, terpene based derivatives, flavour & fragrance ingredients, and other biobased chemicals.

- [Agriculture Solution](#)
  - [Spreader Stickers](#)
  - [Animal Feed Additives](#)
  - [Plant Disease Control](#)

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