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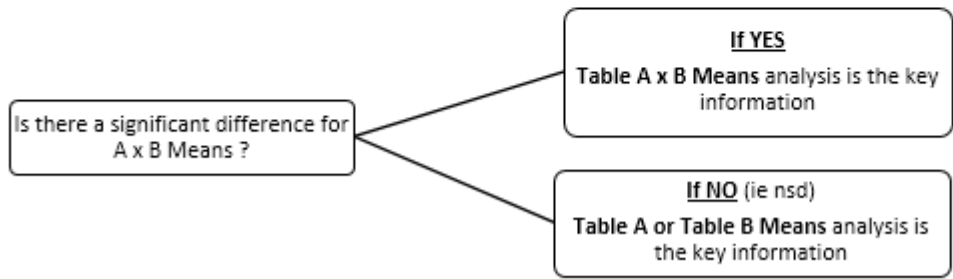
Management of Chickpea Podset & Yield

Trial ID: LB1805 **Location:** Pampas **Trial Year:** 2018
Investigator: Linda Bailey

| | | |
|-------------------------------------|---|---|
| Objective: | To evaluate the potential of Potassium fertiliser or plant growth regulators for biomass management and yield in chickpea | |
| Application: | A | B |
| Application Date: | 9/08/2018 | 24/08/2018 (2 Weeks after Application A) |
| Growth Stage at Application: | False Flowering | Petals extend to Form Flower (Shortly after First Flower) |
| Application Volume: | 100 L/ha | |
| Application Nozzles: | AIXR110015 | |
| Planting: | 29/05/2018 with Commercial Tyne Planter on 32cm row spacing at a depth of ~5cm | |
| Harvest Date: | 29/11/2018 | |
| Harvest Equipment: | Small Plot Header | |
| Soil Type: | Black cracking clay | |
| Potassium Levels: | Colwell: 0-10cm 399 mg/kg, 10-30cm 242 mg/kg Na/K meq/100g: 0-10cm 1.3, 10-30cm 3.0 | |
| Keywords: | Chickpea, Yield | |

Trial designed and analysed as a Factorial

| | In Simple Terms |
|-----------------------|--|
| Table of A Means: | Mean of 'Product' performance with ALL 'Timing' treatments |
| Table of B Means: | Mean of 'Timing' performance with ALL 'Product' treatments |
| Table of A x B Means: | 'Product' performance with EACH 'Timing' treatment |



Management of Chickpea Podset & Yield

Trial ID: **LB1805** Location: **Pampas** Trial Year: **2018**

| Crop Name Crop Variety Assessment Date Assessment Type Assessment Unit Crop Stage Majority Treatment-Evaluation Interval ARM Action Codes | | | | Chickpea PBA Seamer | |
|--|--------------------|--------------|-------------|--|--|
| | | | | 23/10/2018 NDVI Ratio 50% Mature Pods 75 DAA/ 60 DAB | 29/11/2018 YIELD t/ha TY1 |
| Trt No. | Treatment | Product Rate | Appln. Code | | |
| TABLE OF A MEANS (Product) | | | | | |
| 1 | Untreated | - | | 0.680- | 1.70- |
| 2 | Yara K-Flow 3-0-9 | 30000ml/ha | | 0.680- | 1.74- |
| 3 | Supa K 30 | 1000ml/ha | | 0.688- | 1.64- |
| 4 | KNO3 | 9400g/ha | | 0.678- | 1.68- |
| 5 | Lokomotive | 5000ml/ha | | 0.686- | 1.68- |
| 6 | Broadstrike | 25g/ha | | 0.656- | 1.75- |
| 7 | Experimental PGR 1 | 500ml/ha | | 0.666- | 1.71- |
| 7 | Uptake | 0.5% v/v | | | |
| 8 | Experimental PGR 2 | 150mg/l | | 0.682- | 1.81- |
| TABLE OF B MEANS (Timing) | | | | | |
| 1 | False flowering | | A | 0.679- | 1.72- |
| 2 | Petals extended | | B | 0.675- | 1.71- |
| TABLE OF A x B MEANS (Product x Timing) | | | | | |
| 1 | Untreated | - | A | 0.678- | 1.70- |
| 1a | Untreated | - | B | 0.681- | 1.69- |
| 2 | Yara K-Flow 3-0-9 | 30000ml/ha | A | 0.684- | 1.75- |
| 2a | Yara K-Flow 3-0-9 | 30000ml/ha | B | 0.675- | 1.72- |
| 3 | Supa K 30 | 1000ml/ha | A | 0.692- | 1.57- |
| 3a | Supa K 30 | 1000ml/ha | B | 0.684- | 1.70- |
| 4 | KNO3 | 9400g/ha | A | 0.688- | 1.64- |
| 4a | KNO3 | 9400g/ha | B | 0.668- | 1.72- |
| 5 | Lokomotive | 5000ml/ha | A | 0.682- | 1.80- |
| 5a | Lokomotive | 5000ml/ha | B | 0.689- | 1.56- |
| 6 | Broadstrike | 25g/ha | A | 0.655- | 1.75- |
| 6a | Broadstrike | 25g/ha | B | 0.656- | 1.75- |
| 7 | Experimental PGR 1 | 500ml/ha | A | 0.666- | 1.73- |
| | Uptake | 0.5% v/v | | | |
| 7a | Experimental PGR 1 | 500ml/ha | B | 0.666- | 1.69- |
| | Uptake | 0.5% v/v | | | |
| 8 | Experimental PGR 2 | 150mg/l | A | 0.685- | 1.80- |
| 8a | Experimental PGR 2 | 150mg/l | B | 0.680- | 1.81- |

Means followed by same letter do not significantly differ (P=.05, LSD)

| FACTORIAL/POOLED ERROR AOV | | | | | | |
|---------------------------------|----|----------------|-------------|-------|----------|-----------|
| Chickpea - PBA Seamer | | | | | | |
| 23/10/2018 | | | | | | |
| NDVI Ratio 18 R11 75 DAA/60 DAB | | | | | | |
| Source | DF | Sum of Squares | Mean Square | F | Prob.(F) | LSD (.05) |
| Total | 63 | 0.038210 | | | | |
| R | 3 | 0.002693 | 0.000898 | 1.459 | 0.2383 | |
| A | 7 | 0.006556 | 0.000937 | 1.523 | 0.1841 | 0.025 |
| B | 1 | 0.000248 | 0.000248 | 0.403 | 0.5286 | 0.013 |
| AB | 7 | 0.001031 | 0.000147 | 0.239 | 0.9730 | 0.035 |
| ERROR | 45 | 0.027682 | 0.000615 | | | |

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Location: Pampas

Trial Year: 2018

| FACTORIAL/POOLED ERROR AOV | | | | | | |
|----------------------------|----|----------------|-------------|-------|----------|-----------|
| Chickpea - PBA Seamer | | | | | | |
| 29/11/2018 | | | | | | |
| YIELD t/ha Y1 | | | | | | |
| Source | DF | Sum of Squares | Mean Square | F | Prob.(F) | LSD (.05) |
| Total | 63 | 1.913508 | | | | |
| R | 3 | 0.578757 | 0.192919 | 8.498 | 0.0001 | |
| A | 7 | 0.152879 | 0.021840 | 0.962 | 0.4701 | 0.15 |
| B | 1 | 0.002169 | 0.002169 | 0.096 | 0.7587 | 0.08 |
| AB | 7 | 0.158102 | 0.022586 | 0.995 | 0.4473 | 0.22 |
| ERROR | 45 | 1.021602 | 0.022702 | | | |

Assessment Type

NDVI = Normalized difference vegetation index

ARM Action Codes

TY1 = 0.5399568*[2]

DAA= Days after Application A

DAB= Days after Application B

Conclusions:

This trial was designed to screen K fertiliser and PGR products for effects on pod set and yield in chickpea (cv PBA Seamer), and to determine if the effects were impacted by application timing. The trial was planted at the end of May in a black cracking clay with 399 mg/kg K (0-10cm) and 242 mg/kg K (10-30cm). The Sodium/Potassium ratio was 1.3 (0-10cm) and 3.0 (10-30cm). Treatments were applied at false flowering and at the start of flowering.

Visual effects were only apparent from the Broadstrike treatment with transient chlorosis apparent from the 2nd application timing at 10 DAB. Effects were not apparent 10 days later.

An NDVI assessment was undertaken during pod ripening, with no significant differences between the treatments.

There were also no significant differences between the treatments for yield, with mean yields of ~1.7 t/ha.

In this trial, there was no apparent impact from any treatment on yield in chickpea, at either timing.

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Location: Pampas

Trial Year: 2018

| Application Description | | |
|----------------------------|------------|------------|
| | A | B |
| Application Date: | 9/08/2018 | 24/08/2018 |
| Application Start Time: | 11:45 AM | 11:30 AM |
| Application Stop Time: | 12:45 PM | 12:15 PM |
| Application Placement: | FOLIAR | |
| Air Temperature, Unit: | 20 C | |
| % Relative Humidity: | 29 | 49 |
| Wind Velocity, Unit: | 7 km/h | |
| Wind Direction: | S | NNE |
| Dew Presence (Y/N): | No | No |
| Soil Moisture: | SLIDRY | |
| % Cloud Cover: | 0 | 60 |
| Next Moisture Occurred On: | 26/08/2018 | 26/08/2018 |

| Crop Stage at Each Application | | |
|--------------------------------|------------------------------|--|
| | A | B |
| Crop: | Chickpeas | |
| Scale Used: | GRDC | |
| Stage Majority, %: | False Flowering 07 R0 98% | Start Flowering - Petals extend to Form Flowers 08 R1 95% |
| Height, Unit: | 25 cm | |

| Application Equipment | | |
|---------------------------|----------|---|
| | A | B |
| Operation Pressure, Unit: | 350 kPa | |
| Nozzle Type: | AIXR | |
| Nozzle Size: | 110015 | |
| Nozzle Spacing, Unit: | 50 cm | |
| Nozzles/Row: | 4 | |
| Boom Length, Unit: | 2 m | |
| Boom Height, Unit: | 70 cm | |
| Ground Speed, Unit: | 7.2 km/h | |
| Carrier: | Water | |
| Spray Volume, Unit: | 100 L/ha | |