## RESPONSE OF CHICKPEA ENTRIES TO TRANSIENT WATERLOGGING IN THE PHILIPPINE HIGHLANDS

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## Rationale

- Chickpea and other food legume crops play a significant role in overcoming problems related to food and nutritional insecurity in developing countries.
- The stability and increasing the production should be met.







# Rationale

- Legume production in the Philippine highlands is highly seasonal and is largely dependent on the growing environment.
- Waterlogging brought by excessive rainfall contributes to low productivity during the wet season.



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 Evaluation of potential crops like chickpea as an alternative crop and selection of appropriate and resistant varieties capable of growing and yielding satisfactorily under waterlogging conditions is important for successful production.





# Objectives



 The study was conducted to determine the influence of waterlogging at different growth stages of chickpea and to determine chickpea entries resistant to waterlogging.





## **METHODOLOGY**

#### Site Site

 Balili, La Trinidad, Benguet, Philippines (1,332 m asl)

#### **Experimental Treatments and Design**

Stage of waterlogging

- SW0-no waterlogging at any stage
- SW1-waterlogged at vegetative stage (21 days after sowing)
- SW2-waterlogged at flowering stage (50% of plants with one open flower)
- SW3-waterlogged during pod fill (30 days after 50% flowering)

#### <u>Entry</u>

- ICCV 09304, ICCV 92311, ICCV 95332, CCV 08202 and ICCV 92966
- Split plot design, 3 replications



# **Methodology**

## <u>Waterlogging</u> <u>Imposition</u>

- Chauhan, 1997
- Potted plants were soaked into 50 x 450 cm soil tank
- Plants were subjected to artificial waterlogging for 120-144 hours.







## Results









### CONCLUSION

Chickpea entries subjected to waterlogging at the different stages show decreased growth parameters such as flowering, leaf area, plant height, branches, maturity, and survival resulting in low seed yield per plant and weight of 100 seeds.

- Waterlogging at the vegetative stage results in delay of flowering and maturity, decrease leaf area and low weight of seeds, low seed yield and low harvest index.
  Waterlogged plants at pod filling stage senesced at 95 DAP, have small leaf size, low seed yield and harvest index.
- Entries ICCV 09304, ICCV 92311 and ICCV 92966 perform best under waterlogging treatments as shown by large leaves, high seed yield and seed weight.

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# Thank you for listening.



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