

## EVALUATION OF PESTICIDAL EFFICACY OF COW URINE COMBINED WITH SELECTED PLANT EXTRACTS

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This study was conducted to investigate the insecticidal effect of cow urine enriched with plant extracts on insect pests of vegetables. Three susceptible plants, mustard, oxalis and radish were used in a bioassay to determine phytotoxicity. Pure urine, one day fermented and two days fermented urine were applied on above plants. None of these treatments showed significant phytotoxic effect. Two plant extracts, *Derris eliptica* and *Zingiber officinale* were incorporated to enhance the insecticidal properties of cow urine. The treatments were tested against cabbage caterpillar complex: *Hellula undalis*, *Crocidolomia binotalis*, *Spodoptera litura*, *Plutella xylostella*, thrips, mites and aphids in chilli, legume aphids (*Aphis fabae*) in cowpea and mealy bugs in brinjal. The bioassay conducted with aphids revealed that LT<sub>50</sub> for Cow urine + ginger, Cow Urine + Derris were 30 and 45 minutes respectively. Cow urine alone gave only 46 % mortality after four hours. There was no mortality in the control. The mortality was 4.7 % in pure derris and 10.7% in pure ginger extracts after four hours of application. Cabbage aphids, Loopers, and *Spodoptera* populations were significantly ( $p > 0.05$ ) reduced in treated plants compared to the control. The lowest cabbage aphids were recorded in Derris + Cow urine and highest was in Derris + water. Cabbage looper population was significantly ( $p > 0.05$ ) reduced in Ginger + water and the highest count was recorded in cow urine + Ginger. Derris with water showed lowest Army worm (*Spodoptera spp*) counts and highest counts recorded in Cow urine + water. Aphids and white flies (*Bemisia tabaci*) in chili were significantly ( $p > 0.05$ ) reduced in treated plants compared to the control. The lowest counts were recorded in Derris + Cow urine and the highest recorded in Cow urine + Ginger. Cow urine with derris appears to be the best treatment against cowpea pests. Cow urine with derris is the best out of all treatments in controlling cabbage, chilli and cowpea pests. The efficacy of the treatments can be expressed as Derris + water > Cow urine + water > Ginger + water > Cow urine + Ginger > Cow urine + Derris against above pest spp.

**Key words:** Cow-urine, Insect-pests, Plant-extracts