



## THE EFFECT OF WEED AND DIFFERENT LAYERS OF NITROGEN FERTILIZER ON CHLOROPHYLL CONTENT IN BASIL (*OCIMUM BASILLICUM*) INTERCROPPING WITH COWPEA (*VIGNA UNGUICULATA*)

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Chlorophyll content is one of the most important crop biophysical characteristics. These pigments can be related to photosynthetic capacity and productivity of a crop at developmental stage and canopy stresses. Accordingly, the objective of this study was to quantify and characterize the spatial variation of Chlorophyll content in basil. The experiment was conducted as additive design using a split split plot arrangement based randomized complete block design with 3 replicates during 2010. Weeding vs non-weeding and nitrogen levels (0, 50 and 100 kg urea ha<sup>-1</sup>) were assigned to the main plots and sub plot, respectively. Basil and cowpea ratio including 100% basil; cowpea 100% + basil 25%; cowpea 100% + basil 50% and cowpea 100% + basil 75% were arranged in sub sub plots. The studied treatments had a significant effect on chlorophyll content. Increasing of nitrogen fertilizer markedly enhanced the chlorophyll content in monoculture and intercropping. Maximum chlorophyll was obtained when basil plant by 25% and cowpea by 100% were intercropped. Weed interference and monoculture, however, reduced chlorophyll amount in both plants. Number of weed species in basil monoculture was greater than intercropping leading to a reduction of leaf chlorophyll due to increasing competitiveness and decreasing nitrogen transmission to the tissues and changes in nitrate reductase enzyme activity. The cowpea as a cover crop provides good coverage at 100% density and prevented weeds germination and their growth and expansion. Finally, the results showed that the amount of chlorophyll depends on weeds density dynamics and would be decreased due to competition and less allocation of assimilates and production of pigment such as chlorophyll [1, 2, 3, 4].

### References

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## EVALUATION OF ANTIMICROBIAL EFFECT OF *AMMI VISNAGA* AGAINST ORAL STREPTOCOCCI

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Some species of streptococci have great role in dental caries. So control of their activities can promote prevention of dental caries. Use of herbal agents is a notable issue in recent researches. The aim of this study was evaluation of antimicrobial activity of aqueous and hydroalcoholic extract of seed and stem of *Ammi visnaga* against *Streptococcus mutans*, *Streptococcus salivarius* and *Streptococcus sanguis*. First step or screening was designed by determination of antimicrobial activity for each extracts using Disk diffusion method. For those extract which presented it; "no growth halo" was evident around related paper disks. Next step was determination of MIC (minimum inhibitory concentration) and MBC (minimum bactericidal concentration) corresponding to modified macrodilution method for those extracts revealed antimicrobial activity. "No growth halo" was obvious around *S. sanguis* and it was absent around *S. salivarius*; For *S. mutans*, only aqueous seed extract produced the halo. MIC and MBC of aqueous and hydroalcoholic stem extract against *S. sanguis*, were 5 and 7%, stem extract against *S. sanguis* as well as hydroalcoholic seed extract against *S. sanguis*, 5 and 5%, aqueous seed extract against *S. sanguis*, 15 and >30% and aqueous seed extract against *S. mutans*, 20 and >30%, respectively. *A. visnaga* revealed antimicrobial activity against some species of oral streptococci including *S. mutans*. So, we can use it for prevention of dental caries but further investigation is recommended.