SUMMARY AND CONCLUSION
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The present project was undertaken to study the effect of foliar application of AA, H₂O₂ and AA + H₂O₂ in *Solanum surattense* and foliar application of different concentrations of urea in *Solanum khasianum* plants on the fruit productivity and solasodine content. Some biochemical changes and their association with solasodine production have also been worked out. The following is the preamble of the experiments designed and conclusions drawn from the study:

**Experiments:**

1. Study of the effect of foliar spray of AA, H₂O₂ and AA + H₂O₂ at weekly and fortnightly intervals on the solasodine content in the mucilage during different stages of fruit development (10-100 days after fertilization) and harvest characters such as total number of fruits per plant and fruit weight in *Solanum surattense*.

2. Study of the biochemical changes such as enzymes (peroxidase, AA-FR peroxidase, catalase, protease, invertase, RNase and nitrate reductase) and metabolites (AA and its utilization, protein, sugars, RNA, nitrogen and solasodine) with the stage of fruit growth (10-100 days after fertilization), in
different fruit parts (berry wall and fruit pulp) and corresponding leaves in Solanum surattense.

3. Study of the correlations of biochemical entities with the solasodine production during fruit development in Solanum surattense.

4. Study of the effect of foliar spray of urea (0.5%, 1.0%, 1.5% and 2.0%) at fortnightly intervals on the biochemical changes such as enzymes (peroxidase, AA-FR peroxidase, protease and invertase) and metabolites (AA and its utilization, protein, sugars, and solasodine) with the stage of fruit growth (10, 20, 40, 60, 80, 100 days after fertilization) and in different fruit parts (berry wall and fruit pulp) in Solanum khasianum.

5. Study of the effect of foliar spray of urea (0.5, 1.0, 1.5 and 2.0%) at fortnightly intervals on the harvest characters such as fresh and dry matter accumulation of root, main stem, leaves, branches, berries including whole plant weight and total number of berries in Solanum khasianum.

6. Determination of solasodine content from the mucilage of the developing berries (10, 20, 40, 60, 80 and 100 days after fertilization), complete freshly plucked and oven dried berries of Solanum khasianum.
Conclusions:

1. The treatment AA + H$_2$O$_2$ at fortnightly spray overall proved to be the most beneficial both in terms of yield and solasodine content.

2. Young stages of fruit depict the highest AA content and its utilization than the maturing stages.

3. Maturing stages of fruit register maximum accumulation of RNA, protein, sugars and nitrogen in the fruit pulp which also contained maximum solasodine.

4. Production of solasodine content is dependent on the fruit age and morphology, thereby yields more solasodine content in yellow mature (80-90 days old) fruits. This is the right stage of maturity when it should be harvested to get maximum solasodine.

5. Solasodine synthesized in the young leaves, berry wall and also a little amount in calyx is continuously transported to the fruit pulp (chief site of its accumulation) and concentrated in the mucilage surrounding the seeds.

6. Dry berries yield more solasodine than fresh ones. Storage and transportation are added advantages.
7. The significant correlations have been observed between the fruit pulp solasodine and RNA, AA, AAU, nitrogen and protein, leaf solasodine and nitrogen; and berry wall and fruit pulp solasodine.

8. Urea spray enhanced the activities of enzymes, synthesis of proteins, sugars and solasodine content. Maximum turnover of proteins and sugars was recorded in the fruit pulp of 80 days old berry.

9. Increase in the solasodine content is directly related to the concentrations of urea applied foliarly.

10. Foliar spray of 1.5% and 2.0% urea solutions are proved to be the most beneficial as far as total solasodine production is concerned.

11. There was a negative correlation between protein content and yield.