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## NATURAL RESOURCE MANAGEMENT

# Litchi-based agri-horti systems on degraded lands of Dehradun

In intercropping with litchi *(Litchi chinensis* Sonn. cv. Rose Scented) in the first phase, annual mean cowpea equivalent yields harvested from cowpea - *toria*, okra - *toria*, blackgram - *toria*, sole pigeonpea and sesame - *toria* were 2.32, 2.31, 1.34, 0.76 and 0.75 tonnes/ha, respectively. Annual turmeric equivalent mean yields recorded with turmeric and colocasia under litchi were 7.9 and 7.0 tonnes/ha during the second phase.

Highest mean *litchi* fruit yield (3.6 tonnes/ha) was harvested with cowpea-*toria,* followed by blackgram - *toria* (3.4 tonnes/ha) in comparison to sole *litchi* (3.2 tonnes/ha) during the first phase. And during the second phase, maximum mean litchi-fruit yield with turmeric was 9.0 tonnes/ha, followed by 8.6 tonnes/ha in colocasia over sole *litchi* (8.03 tonnes/ha);during the second phase, intercropping enhanced *litchi*- fruit yield.

Net present value (NPV) achieved was in the order of *litchi* (cowpea - *toria*)/turmeric > *litchi* + (okra - *toria*)/ colocasia > *litchi* + blackgram - *toria* > *litchi* + pigeonpea > *litchi* + sesame - *toria* > sole *litchi* plantation. The benefit-cost ratio was > 5.0 in 10 years, followed by 15 years of intercropping with *litchi* (< 5.0) as compared to sole *litchi* plantation (3.50).

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