6.0 SUMMARY AND CONCLUSION

- Tinea corporis was the most frequently encountered clinical condition followed by tinea cruris in the present study in the geographic region comprising Shimla, Solan and Parwanoo of Himachal Pradesh.

- *Trichophyton mentagrophyte* was implicated as the predominant dermatophyte species followed by *Trichophyton rubrum* and *Microsporum gypseum*.

- Unhygienic conditions among low socio-economic group, frequent migration of laborers, workers and frequent visits of tourists to this region may be some of the contributing epidemiological factors.

- *T. mentagrophyte* isolates were found more susceptible to both itraconazole (MIC$_{50}$-0.125μg/ml) and ketoconazole (MIC$_{50}$-0.0625μg/ml) as compared to terbinafine. The latter was found least susceptible against *T. mentagrophyte* and *T. rubrum* isolates based on the higher MIC$_{50}$ values (0.50μg/ml) of this antifungal agent. *T. rubrum* was also found more susceptible to itraconazole having lower MIC$_{50}$ value (0.0625μg/ml) than ketoconazole (0.125μg/ml). Ketoconazole was found most effective against a single isolate of *M. gypseum* tested in the study.

- A total of 14 isolates (*T. mentagrophyte*-10, *T. rubrum* -3, *M. gypseum* -1) were used in PCR assay using ITS regions of rRNA as target of amplification.

- The nucleotide sequencing of the amplicons revealed that *T. mentagrophyte* isolates identified by conventional methods were identified as *T. mentagrophyte var. interdigitale* as its amplicon showed 98-99% homology with the published NCBI sequences. Similarly the *T. rubrum* proved to be *T. rubrum* as the isolates showed 97-99% homology and a solitary isolate of *M. gypseum* (VBS-32) was identified as *Arthroderma gypseum*. The *Microsporum gypseum* was previously named as *Arthroderma gypseum*.

It may be concluded the amplification of ITS regions can thus, supplement the conventional methods of identification of dermatophyte species as disconcordance was not observed between the two methods. Based on MIC$_{50}$ values, itraconazole and ketoconazole appeared to be quite effective against dermatophyte species and can be used effectively for treating infections due to these pathogens.