**Chapter-4**

**DISCUSSION**

**4.1. Thin Layer Chromatography (TLC)**

The issue of veterinary drug residues in cheavon derived products has become increasingly important in many developing countries. As TLC is mostly practiced method and a huge analysis was done in the field of poultry so all the results will compare with poultry residue. In our country aspect no authorized work found in goat meat. This type of work is done first time in Bangladesh. In our study, we observed that antibiotic residues were found more in liver (70%) than in kidney (55%) and thigh muscle (35%) which coincided with Kabir et al., (2004) and Oboegbulem and Fedelis, (1996). They found antibiotic residues were more in liver (75%) than in kidney (40%) and breast muscle (35%). But this result is not supported by Pavlov et al., (2008) who conducted that 33% antibiotic presence in kidney and 17% in liver and 4% in breast muscle. This could suggest that most samples were taken at the time when drugs were been metabolized in the liver and not yet at the stage of clearance by the kidney. Invariably, antibiotics are most often administered close to the time of slaughter (Vahedi et al., 2001).

It was showed that, in case of Goat meat samples by Thin Layer Chromatography (TLC), 53.3% of meat sample were detected positive for antibiotic residues in our all studied samples which is disimiller with Shahid et al., (2007) who mentioned about 44.8% antibiotic residue positive in goat meat samples. This result was also quite similar with Shareef et al., (2009) who showed that more than half of the tested samples were positive (52%). Similar finding also observed by Tajick and Shohreh, (2006) in Iran, who found that more than 50% ofpoultry meat samples had noticeable antibiotic residue. In another study Alla et al., (2011) disagreed with this result, they conducted that Out of 300 poultry meat tested for antibiotic residues 52 (17.3%) were found as positive, which indicated the misuse of antibiotics by veterinarian and owners as well as the absences of monitoring of antibiotics residues in the market. Al-Ghamdi et al., (2000) also disagreed with our result, who mentioned that 69% samples are positive for antibiotic residue in poultry meat samples. In our study, among the sample, 70% of liver, 55% of kidney and 35% of thigh muscle were detected positive for antibiotic residues. These finding was differs with Vahedi et al., (2001) and Alla et al., (2011). Vahedi et al., (2001) mentioned that antibiotic residue in kidney were slightly higher (52.2%) than liver (51%) and breast muscle (44.5%). Alla et al., (2011) also observed that organs tested for antibiotic residues showed that kidneys had the highest percentage of positive than other organs 30 (10%). This finding coincided with Hala, (2006). Most of the antibiotics excretion was done by the kidney such as animoglycosides, chloramphinicol and tetracycline. The study also reveals that, 20% of tetracycline, 10% of amoxicillin, 15% of sulfanilamide and 20% of ciprofloxacin and 10% penicillin were positive. The results of tetracycline were not similar to the findings of Muriuki et al., (2001) who studied tetracycline residues in goat samples, Out of 250 samples that were analyzed for tetracycline residues 114 (45%) had detectable tetracycline residues.

In any case, these findings were nearly similar to those obtained in Iran by (Tajick and Shohreh, 2006), who found that more than 50% of poultry meat samples had noticeable antibiotic residue. It was also reveal that, liver (70%) was the predominant antibiotic residues sites, followed by kidney (45%) and breast muscle (30%).

Among the selected antibiotics, ciprofloxacin (20%) was the leading antibiotics detected in liver samples of poultry followed by tetracycline (20%) and sulfanilamide (15%). These findings are quite similar with Naeem et al., (2006).

Tetracycline residues are encountered in 20% of liver, 15% of kidney and 10% of thigh muscle in all tested samples. The result observed from the study nearly similar to Shareef et al., (2009) where 28% of the tested liver samples were positive. The result also similar with Cetinkaya et al., (2012) who conducted that out of 60 poultry meat samples, 11 (18.3%) contained tetracycline residues But, this proportion slightly differs from with the findings of Salehzadeh et al., (2006) where they mentioned oxy-tetracycline positive samples, above MRL, were 27.8%, 95.6% and 18.9% in muscles, liver and kidney samples respectively. Al-Ghamdi et al., (2000) also showed that 87% and 100% samples are positive for oxytetracycline in muscle and liver respectively which is differ from our study.

The residue of sulfanilamide detected in goat liver was higher than other sample (kidney and thigh muscle). In our study, 15% samples are positive for sulfanilamide in Liver, 10% in kidney and 5% in thigh muscle. It was observed that 10% of tested sample was positive for sulfanilamide and the percentage has little difference with findings of Kabir et al., (2004), who studied that highest percentage of sulfanilamide presence in liver. Cheong et al., (2010) also conducted that 33.1% samples are positive for sulfonamides in liver.

Amoxicillin residues were detected in various percentages in liver, kidney and thigh muscle of goat sample. In our study, 10% samples are positive for amoxicillin in liver, 5% in kidney and 5% in thigh muscle. This finding is similar with Popelka et al., (2005) who observed that 12% sample are positive for amoxicillin in liver 4% in kidney and 4% in breast muscle.