

## Development of Goat Warble Fly Vaccine for the Control of *P. Silenusbraur* in Local Long Hairy Goat (*capra hirsra*)

Muhammad Mazhar Ayaz<sup>1\*</sup>, Muhammad Mudasser Nazir<sup>1</sup> and Saleem Akhtar<sup>2</sup>

<sup>1</sup>Laboratory of Parasitic Chemotherapy and Entomology, Department of Pathobiology, Faculty of Veterinary Sciences, BahauddinZakariya University, Pakistan

<sup>2</sup>Department Clinical Sciences, Faculty of Veterinary Sciences, BahauddinZakariya University, Pakistan

### Introduction:

Warble fly disease or Grub disease is equally affecting the cattle, buffalo and goats at Pakistan especially in Southern Punjab. The area mostly under attack is near rivers belt of River Sind, River Chennab area and Suleyman mountainous area. The disease has economic effect on the growing economy of the livestock based country/ region. The disease is endemic for centuries in the subcontinent and area reported.

### Materials and Methods:

For the affective control of *P. silenusbraur* the somatic vaccine was developed first time in Pakistan. The somatic antigen of the 2nd stage larva was purified by ultracentrifugation at the speed of 3000 rpm for 10 minutes. The supernatant was obtained and desiccated. The 1 µgm of the dried somatic material was mixed with saponins of *Sapindustrifoliatus* (A new candidate for adjuvant) and injected subcutaneously at 0.5 ml to the suspected *Capra hirsra* harboring migratory larva of *P. silenusbraur*.

### Result:

The injected animals showed specific immunity along with increase in Neutrophils. The animals under experiment could not show the nodules or eruptions of L3 in skin of the animals. The study proved that somatic vaccine against *P. silenusbraur* showed 85 to 95 controls in grub eruption that could be a good candidate for the effective control of *P. silenusbraur* L3 along with *Sapindustrifoliatus* new candidate in adjuvants family.

### Discussion:

Warble fly inflicts economic losses in livestock and tannery industry. It is imperative to control the problem and to address the issues timely. The fly is endemic in area and has been reported from adjacent countries including Iran but little data from Afghanistan about the disease. The ivermectin remained a drug of choice for decades to control the disease but emergence of resistance is a constraint. To address the dipteran disease which completes its partial life cycle inside the host can be justified by the vaccine. This is first time that warble fly in long hairy goats of the area has been treated effectively by the vaccine.