





Importance is receivi	of parasite in ing attention	iteractions influencing human diseases	
Province	2006 HIV prevalence %	No Time for Denial or Complacency bit Mark No. With State St	
KwaZulu-Natal	39.1		
Mpumalanga	32.1		
Free State	31.1		
Gauteng	30.8	Marcel	
North West	29.0	legiected Diseases	
Eastern Cape	29.0	Incorporating a Rapid-Impact Package for Neglected Tropical Diseases with Programs for HIV/AIDS, Tuberculosis, and Malaria Acceptering poor kath (bid) and straight for devige unit were and clerk regimes, dischards, bid Charles, unit Makhak, where tools	
Limpopo	20.7		
Northern Cape	15.6		
Western Cape	15.2	Coinfection with the neglected tropical diseases adversely affects the network bit the diseases adversely affects	
National	29.1	of the big three.	
	•	Hotez et al. 2006	















Present Research - KNP/HiP

Phase I

 Determination of blood parasite spp; comparison of buffalo pathogen communities across HiP and KNP

Phase II

 Resource competition and haematology patterns
 Niche diversity, additive effects of haematogenous pathogens



Objectives

- To identify blood parasites in African buffalo
- To describe parasitaemia across HiP and KNP
- To evaluate competition among pathogens
- To investigate parasite-host interactions in relation to host traits and BTB status



II. Exhibit highest levels of parasitaemia & species richness











2006 Pilot Study - HiP

- 16% of buffalo (32) had parasitised RBCs (*N*=199)
- *Babesia* was the most prevalent parasite (87.5%)
- Co-infections occurred (*BT*, *AT*)
- 4/24 BTB[+] were parasitised (16.7%)
 Compared to 21/153 BTB[-] buffalo (13.7%), NS
- Significant correlation between any haemoparasite infection and age (younger) + body condition (poorer)
- Significant correlation between haemoparasite spp. richness and age + body condition

















- 9/29 BTB[+] are parasitised (31%), NS
- No correlation yet between blood parasite infection and BTB status...





In summary:

- Blood parasites infect free-ranging adult buffalo; both single and double infections occur.
- Coinfection--coupled with a major chronic disease--may play a role in shaping patterns of disease in natural populations.
- This study is relevant to understanding patterns of infection in wildlife, livestock, and humans.



Haemoparasite Research Expansion

- Impact of blood parasites on host fitness and survival
- Degree of transmission of haemoparasites between cattle and buffalo
- Species richness in Zim and Moz buffalo populations





