



**Figure 1.** **a**, Maize plants affected with wilt at Cherlabuthkur, Karimnagar district, Andhra Pradesh. **b**, Symptoms of late wilt in maize.

primarily on the persistence in infected crop residues.

Previously it was reported that widespread use of no-till corn systems and the unknown impact of extensive glyphosate application increased the severity of several related Gaeumannomyces-Harpophora-type diseases, which could eventually result in inoculum build-up in the soil or increased virulence of the pathogen<sup>1</sup>. Moisture management and flood-fallowing may be useful cultural controls for late wilt where they are economically

practical<sup>2</sup>. A physiological sufficiency of potassium is also reported to reduce late wilt in low-K fields of India, but not in the higher K soils of Egypt. Phosphorus, organic amendments (straw, cotton cakes and brodret) and micronutrients (Cu, Fe, Mn and Zn) also reduce disease severity<sup>3</sup>. The extensive use of glyphosate in the no-till corn production in USA, which can immobilize Mn in the soil and restrict plant uptake and transport of Cu, Fe, Mn, Zn and other essential micronutrients, may have a serious predisposing

effect on this disease through reduced plant resistance or increased pathogen virulence<sup>4</sup>.

The geographic distribution of this fungus may be expanding, or its recognition may be increasing. Further there is great need for research in this area to evolve suitable management strategies.

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## Is there hope for our own tetracorn?

In a popular article in *Aaple Paryavaran* (Marathi magazine published from Thane), we had used the phrase ‘mistaken identity’ to highlight the confusion reigning over the identity of the four-horned antelope (FHA) and barking deer (BD) in the southwestern parts of Maharashtra. The confusion emanates from the blatant use of the Marathi name ‘bhekar’ for these two very different species – by common man and Forest Department officials alike. Recently, the phrase almost acquired its meaning from the lexicon of criminal law when a FHA was mistakenly identified as a BD by Forest Department officials. The animal, unfortunately, was dead and was seized from a troop of poachers in Satara district, Maharashtra. In the initial procedures the animal was described as bhekar implying – in the usual sense of the Marathi name – that the killed animal was a BD. Only after a curious second thought by the concerned forest officer and a hopeful conjecture by the first

author, the animal was correctly identified as a FHA from its photographs.

We have been consistently rallying for the past few years with the local Forest Department to clear the air about these two animals and use two distinct Marathi

names for them at least in their records. We have showed them evidence of FHA presence; distinct signs ascertaining its presence; got the information published<sup>1</sup> and distributed. But the change, obviously, takes time. This is especially important



**Figure 1.** Camera trap photo of four-horned antelope from Dapoli. This adult has just the posterior pair of horns.

because the FHA and BD are included in Schedule I and Schedule III of the Wildlife (Protection) Act, 1972 respectively. Different schedules imply differential status, with the Schedule I animals receiving the highest protection level. The crimes against Schedule I animals are non-bailable. That is how a hunting case turns on its head when it is shown that the hunted animal is a FHA and not a BD!

A look at the scientific literature reveals that the Marathi name 'bhekar' is always used for BD. Almost all the identification guides describe BD as bhekar<sup>2,3</sup>. We found only one old reference – from late 19th century – that mentioned FHA as 'Benkara or Bekra of Marhattas'<sup>4</sup>. For the last six years, the first author has been working in the Konkan region of Maharashtra and found that people here know FHA by the name bhekar or bhakra. They were shown photographs of FHA and its middens which they identified as those of bhekar. Thus, at least in the coastal districts of Ratnagiri and Sindhudurg in Maharashtra, the FHA is known as bhekar. At the same time the working plans of the Forest Department in Ratnagiri and Sindhudurg districts mention bhekar, but actually mean BD. There is no mention of FHA by any of its names. They do not report FHA in their wildlife census.

However, in other parts of the state, especially in the districts of Kolhapur, Sangli, Satara, BD is called bhekar while giving different names to FHA. These names include Malsanda and Malga, aptly describing the habit of FHA to defecate amply at the same spot in an open area. Three protected areas in these districts – Koyna WLS, Chandoli NP and Radhanagari WLS – report the presence of FHA. We have confirmed these reports by visiting those PAs, looking for signs and interviewing local people<sup>1</sup>. But, the above-mentioned hunting incidence happened in Satara district, thereby indicating that the nomenclature goof-ups are taking place there as well.

All this has led to a typical case of mistaken identity in which several FHAs killed by poachers could have passed as BDs – thus letting the culprits get away

with mild punishment, if any. Several scientists refused to believe us when they were told that FHA was present in Ratnagiri district. This, perhaps, was due to Prater's<sup>2</sup> note in his famous book that FHA is 'not found on the Malabar Coast'. It is also essential to check the distribution and abundance of BD in this part of its range.

FHA and BD are clearly difficult to identify distinctly in field conditions due to similar size and coloration. Sharma<sup>5</sup> re-asserted from historical records that these two animals were quite often confused with each other. But obvious differences can be seen after a closer scrutiny. BD *Muntiacus muntjak* (Zimmerman) belongs to Cervidae – the family of deers; FHA *Tetracerus quadricornis* (Blainville) is a member of the family Bovidae, subfamily Bovinae and tribe Boselaphini. Unlike the regularly shed antlers of deers, the FHA male has permanent horns. Unlike true antelopes, the horns of FHA are small, straight without rings. And unlike nilgai *Boselaphus tragocamelus* (Pallas) – its closest relative – FHA is distinctly small in size. More interestingly, FHA has another pair of small horns in front of the main pair. These two pairs are not connected with each other in any way. The anterior pair is usually smaller than the posterior pair. In several cases, they are nothing more than bony knobs<sup>2</sup>. Absence of anterior horns in several heads, possibly, adds to the confusion of calling a two-horned animal as four-horned (Figure 1). Perhaps, anterior horns start growing after a certain age, but not as early as 14–15 months as Sharma<sup>5</sup> has predicted.

In fact, Groves<sup>6</sup> has identified three sub-species of FHA in the Indian subcontinent on the basis of metric differences in the presence or absence of anterior horns, horn length, nasal breadth and skull length. This is a laudible idea, except that the averages and variation in his data and small sample sizes render it too early to distinguish three sub-species as he has done. Perhaps, he had not determined the age of each skull that he measured. Sharma<sup>5</sup> has also pointed out several other factors that could be responsible for the absence and variable

length of the anterior horns. Although in recent times some long-term studies have been taken up on FHA<sup>5,7,8</sup>, it remains one of the scientifically ignored species of India<sup>9</sup>.

Lack of elaborate studies on the taxonomy, distribution and behaviour of this unique species apart, there is complete absence of understanding of the value of this species. There is nothing wrong in saying that this is the only species on the earth to have two distinct pairs of horns. While we have immortalized the myth of the unicorn, we are on the way to lose our own thriving, monotypic tetracorn<sup>10</sup>. In a country so careless about its marvelous animals, there is only little hope in the form of curious Forest Department officers, even after providing legal protection.

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