CORRESPONDENCE

remain unused. No KVK has a model farm that combines agriculture, horticulture, veterinary and agroforestry with water conservation, for demonstration to 'marginal farmers'.

The Agriculture Technology Information Centre (ATIC) was initiated with a novel concept that the farmers will get all the information regarding agricultural products, dairy, poultry, piggery, goat-rearing technology and equipments through a single-window system. But many did not share their produce, seed, poultry and dairy products with ATIC. The Centre cannot get financial support unless the products are sold through it according to the ICAR guidelines.

ICAR should undertake corrective measures, as it is the only national organization responsible for the agricultural sector in the country.

1. Anon., Report, ICAR, New Delhi, 1989.

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Unusual foaming along Thiruvananthapuram coast

Unusual foaming was observed on 18 and 19 October 2009 along the coast of Thiruvananthapuram, Kerala, India. A similar phenomenon was reported in 1999, which suggested that foaming in coastal waters of the Northern Adriatic, the English Channel and beaches of France, the Netherlands and Germany was due to the mucilage formed from the extracellular polymeric substances produced by the phytoplankton blooms (cells > 10^4 to 10^6 per ml) of *Chaetoceros affinis*, *Skeletonema costatum* and *Phaeocytis.* These are known to produce a narrow stretch of foam in offshore waters.

The analysis of phytoplankton (Table 1) indicated that there was no phytoplankton bloom, as in the case of foaming reported elsewhere. No species as reported in the literature was found in the foam. Analysis of the water and sediment samples collected from the foamed regions did not reveal anything peculiar. The foam was found to be milky-white and was retained in the beach sand. The sandy beaches of the coastal belt extending from Puthencope to Puthukurichy were found interspersed with dead jellyfish, *Rhopilema* sp. (Figure 1). In the laboratory, foam-creating experiments were carried out. Dead jellyfish washed off the shore were collected. A cut piece of jellyfish weighing 2 g was introduced into a series of 50 ml Nessler's tubes and each tube was half filled with sea water. The tubes were vigorously shaken. Milky-white foam formed on the surface of water column. The foam was similar to the milky foam formed at the study site. The foam stayed in the tubes for a period of 30–45 min.

Our analysis suggests that foam formed because of the wave action upon gelatin released from the dead jellyfish. However, this is not a cause for concern, because no abnormal change in sea water or on biological productivity or fish catch was observed. Foaming in the coastal waters of India has not been reported thus far. The present study explains foam formation in coastal areas by strong wave action on the gelatin produced from the dead jellyfish.

1. Thornton, D. C. O., *Ethol. Ecol. Evol.*, 1999, **11**, 179–185.

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Table 1. Phytoplankton species reported from Thiruvananthapuram coastal foam

Phytoplankton species	Cells/ml (n = 10)
Asterionella japonica	8
Ceratium extensum	6
Chaetoceros curvisetus	16
Chaetoceros diversus	11
Coscinodiscus sublineatus	31
Ditylum brightwellii	4
Holoccolithophorids	2
Rhizosolenia alata	9
Skeletonema costatum	27

Figure 1. Dead jellyfish washed ashore.