Free Range Egg & Poultry Association of Australia Inc. April 2012

Sustainable Stocking rates on Pasture for Free Range Hens

Two issues arise over outdoor stocking densities for free range eggs production – the ability of hens to forage for most of their feed on the property rather than rely on supplementary feed and the nutrient load imposed on the land.

One thousand hens produce approximately 20 tonnes of semi dry poultry manure each year. Allowing the hens to free range over a pasture area has to be designed around the need to maintain pasture cover to maintain farm sustainability, avoid dust and odour nuisances to neighbours and to avoid off-site pollution caused by the nutrients in the manure.

Maintaining well managed pasture over the range area is seen as the best method to handle these issues and is a requirement of most Standards for the production of free range poultry. A well managed pasture provides an opportunity for retaining and utilizing the nutrients from the poultry flock on site and avoiding the problems of leeching excess nutrients into ground water and nutrient run off into waterways or onto neighbouring properties. Excess poultry manure applied to pasture has been shown to increase soil salinity.

The upper limits are determined by the success in managing the rotation of the flock around the pasture to maintain cover and growth of the pasture and the nutrient load that the system can handle.

The upper limit on nutrient loads is seen as critical and assessable and this was a major factor in formulating the recommended upper limit on stocking rates for the range during the development of free range egg production standards and the Model Code.

Agronomists assisted with the exercise and they looked at their experience with highly productive dairy pastures in the County of Cumberland (NSW) which had been fertilized with poultry manure and irrigated. These perennial pastures were mainly a Kikuyu Ryegrass Clover pasture which could yield in excess of 20 tonnes of dry matter a year.

Such a pasture would normally be recommended to be fertilized with 172 kg of N from Urea, 22kg of P from Single super and 60 kg of K from Muriate of potash. Poultry manure application rates had traditionally been at a higher rate resulting in high phosphate and potassium levels and an increase in soil ph but it was felt that an application rate of 15 tonnes of poultry manure per ha per annum would be sustainable in the longer term. The dairy farms had been using poultry manure at these rates for over twenty years.

Using semi dried poultry manure as the calculation, 15 tonnes of manure per annum would be applying 293 kg of N, 195 kg of P and 97.5 kg of K per ha per annum to the pasture. This rate

was equivalent to the output of 750 hens. However since the hens would spend the night in the laying house from which the manure could be removed and used at another site it was translated into supporting a maximum daily stocking rate of 1500 hens per hectare.