University farms at Reading

### Shinfield
- **Area**: 580 ha
  - Houses the Centre for Dairy Research
- **History, land use and stocking**:
  - Owned since 1903:
    - 150 ha Grazing / silage leys
    - 130 ha Maize
    - 90 ha Winter wheat
    - 30 ha Oilseed rape
    - 110 ha Permanent pasture
  - Owned since 1934:
    - 12 ha Crop Research Unit
    - 60 ha Winter barley
    - 20 ha Maize
    - 75 ha Grazing leys
  - Other:
    - 60 ha Woodland / scrub
    - 10 ha Voluntary set-aside

### Sonning
- **Area**: 180 ha
- **History, land use and stocking**:
  - Owned since 1934:
    - 12 ha Crop Research Unit
    - 60 ha Winter barley
    - 20 ha Maize
    - 75 ha Grazing leys
  - Other:
    - 13 ha Woodland / scrub

### 550 Holstein Friesian Dairy Cows
The herd currently averages 9,500 litres of milk sold per cow per annum at 4% butterfat and 3.2% protein. The cows are milked through a state-of-the-art 50 point rotary parlour.

### 360 Dairy Youngstock
Sonning is used for rearing young stock and beef calves; the dairy replacements are the progeny of high genetic merit Holstein sires; and are returned to Shinfield to calve at two years.

### Management
The farms are commercially run within the constraints of research programmes, teaching, PR and outreach. Staff and machinery are used for both farms. The University Farms Manager (James Lamburn) is responsible for Shinfield and Sonning; he reports to the Farms Board.

### Teaching
Both farms are used for student classes and visits throughout the degree programmes, and are equipped with state of the art teaching rooms and laboratories to allow the integration of practice and theory. For example, students have a competition to grow the highest net margin cereal as part of the Cereal Agronomy module; have prepared an Entry Level Stewardship application for our farm at Sonning for Environment and the Farm Business, and as part of the Animal Science in Practice module, data and samples are collected and analysed on the farm.
Research

**PEL Plant Environment Laboratory**
- A dedicated controlled environment facility for crop science research; comprises plant growth chambers, controlled greenhouses, and modified polytunnels.
- Research concerned with how climate variability and change affect crop productivity, the interactions between crop genotype and environment, and how the crop growing environment affects crop quality and food safety.

**CRU Crop Research Unit**
- 10 hectare site of the University’s most uniform soil; used for research and experiments by students; new laboratory for analysis of plant material.

**CEDAR Centre for Dairy Research**
- Established 1992 and totally refurbished in 2007; unique state of the art research facility to conduct applied and strategic research associated with milk composition, nutrition, reproduction, health and the environmental impact of dairy cows.
- 500 cows for applied research; 200 can be fed individually and 300 group fed with milk recorded daily and sampled frequently.
- 36 cows for strategic studies; includes measuring nutrient digestibility and associated impact of milk composition and nitrogen, phosphorus and methane production.

**MGRU Meat and Growth Research Unit**
- Available for work with poultry, pigs and small ruminants.
- Focus on producing healthier animal-derived foods.

**Reducing saturated fatty acids in the food chain**
Research into reducing saturated fatty acids entering the UK food chain by targeting milk, with concomitant reduction in the environmental impact of milk production. This includes specific projects targeted at primary production on commercial dairy herds, investigating the potential of different oilseed-based supplements for dairy cows and assessing the impact of modified dairy products on cardiovascular disease risk in humans.

**Environmental impact of the UK dairy industry**
Reducing environmental pollution from ruminant livestock by optimising nutrition to increase the capture of carbon and nitrogen in saleable products.

**Increasing selenium content of food**
Research in both ruminant and monogastric livestock investigating the effects of selenium source and dose on aspects of animal health, selenium incorporation into body tissues and subsequent selenium content of meat.

**Sustainability of the UK dairy industry**
Focus on maximising the profitability of dairy businesses by increasing the longevity of dairy cows; use of alternative breeds, improved nutritional strategies, new techniques for monitoring and preventing metabolic disease.