NSW DEPARTMENT OF
PRIMARY INDUSTRIES

Establishing pastures - Readers' Note

This document is part of a larger publication. The remaining parts and full version of the publication can be found at:

http://www.dpi.nsw.gov.au/agriculture/livestock/dairy-cattle/feed/publications/establishing-pastures

Updated versions of this document can also be found at the above web address.

Plan your pasture

Matching feed requirements of the dairy herd with home-grown pastures every year requires careful, long-term planning. This will ensure a consistent supply of good-quality feed to meet seasonal demand from milking and dry stock while ensuring surplus feed for conserving as silage or hay.

A combination of summer- and winter-growing pastures or fodder crops is required to ensure that risk is spread to overcome droughts, floods and the seasonal extremes of temperature that are a regular feature of dairying in most districts. Deficits of pasture or crops can be supplemented by bought concentrates, hay or silage or from fodder reserves. The need for careful planning increases as stocking rates rise.

Matching herd feed requirements with paddock feed can be simplified by using FEED PLAN, a computer program available from NSW Agriculture as part of the Milkonomics package. Ask your local advisory officer for information. FEED PLAN calculates the feed supply needed to meet feed demand for the farm. There are two parts to the process.

First, a preliminary feed budget calculates the feed surplus or deficit for various times of the year based on the feed supply from permanent pastures and the feed requirements of the herd. Pasture production is predicted from growth rates for each district (see tables). This budget indicates the feed deficits that must be met by sowing crops and pastures. Depending on the balance of permanent pastures, the deficits will occur at various times of the year. FEED PLAN allows selection from a range of tropical and temperate forage crops and fertiliser options to fill some or all of the feed shortfalls left by permanent pastures.

The final plan includes the net extra feed production from the management alternatives chosen to prevent feed deficiencies and maximise the use of surplus feed. The net benefits of the management alternatives are the differences between the growth rates of the sown species and the replaced base pasture species. A range of alternatives can easily be examined so that the pasture system best suited to a particular farm can be designed. FEED PLAN allows quick and simple calculation of budgets, and produces graphs that conveniently illustrate the sufficiency or deficiency of the feed supply from the proposed pasture system. If a deficit remains after several sowing or fertilisation options have been tested, it may have to be met by supplementary feeding.

When you have chosen the combination of pastures or crops to meet herd requirements, you need to plan ahead:

- Identify areas for cultivation or direct-drilling.
- Decide timing of the operation.
- Assess the need for a fallow to increase soil moisture before sowing.
- Consider planting a break crop to reduce serious weed burdens, break the disease cycle and control the build-up of soil-borne pests.
- Control weed species that are likely to set seed and invade the new pasture in the first year after sowing.
- Concentrate stock to remove excess groundcover before ploughing, direct-drilling or using a herbicide before direct-drilling.
- Decide the need for pretreatment for hard-to-kill grass species such as African lovegrass or giant Parramatta grass.

For most pasture sowings a plan will be needed 3 months before sowing. For problem situations where difficult-to-kill weeds are present, a plan may be necessary up to 12 months before sowing.

Pasture growth rates (kg dry matter/ha)—Central Coast

	Kikuyu + nitrogen	Kikuyu + white clover	Paspalum + ryegrass + white clover	Perennial ryegrass + nitrogen	Perennial ryegrass + white clover	Highly winter-active lucerne	Semi-dormant lucerne	Lucerne + ryegrass + white clover
January	49	40	35	10	10	46	41	33
February	50	40	35	10	10	40	38	33
March	45	40	40	25	20	32	32	28
April	40	35	35	35	30	25	21	20
May	30	25	35	40	35	18	11	35
June	0	5	30	30	30	12	8	30
July	0	5	30	30	30	11	7	30
August	0	5	32	38	35	15	11	32
September	0	20	60	73	65	22	21	55
October	0	20	60	72	65	38	42	55
November	10	15	55	65	60	44	53	50
December	20	20	50	50	50	43	47	35

Pasture growth rates (kg dry matter/ha)—Tropical pastures

	Setaria	Kikuyu	Paspalum	Carpet grass	Ryegrass + clover	Ryegrass + nitrogen	Ryegrass	Lucerne
January	36	32	27	21	13	21	11	64
February	56	54	39	30	13	21	11	57
March	53	60	39	27	19	38	26	46
April	27	40	19	10	21	38	29	38
May	9	19	3	3	27	43	32	25
June	3	8	0	0	19	38	24	13
July	1	3	0	0	19	38	24	11
August	1	4	0	0	38	48	32	13
September	8	13	12	3	48	59	30	36
October	13	12	18	5	59	70	11	53
November	13	12	18	9	43	48	9	64
December	15	14	18	10	21	27	5	72

Pasture growth rates (kg dry matter/ha)—Southwest NSW

	Paspalum + clover high N	Paspalum + clover med. N	Paspalum + clover low N	Ryegrass + clover high N	Ryegrass + clover med. N	Ryegrass + clover low N	Subclover + annual ryegrass high N	Subclover + annual ryegrass low N
January	105	75	52	75	55	37	0	0
February	92	70	45	60	45	30	1	0
March	75	55	37	46	33	22	5	2
April	22	15	11	35	25	17	15	7
May	11	7	5	25	18	12	31	15
June	5	3	2	16	12	8	30	15
July	5	3	2	15	10	7	28	14
August	11	7	5	25	18	12	38	19
September	22	15	10	48	36	24	60	30
October	44	30	20	15	48	33	60	30
November	66	48	32	78	55	38	55	27
December	100	75	50	85	63	42	0	0