grasses such as are formed by *Hyparrhenia* species in the high veld, the seedlings of common tree species such as *Brachystegia spiciformis*, *Julbernardia globiflora* and *Parinari curatellifolia*, which produce seed abundantly every year, are almost totally absent.

The other characteristic of Rhodesian vegetation, the appearance of fresh shoots of grass, and the flowering shoots of many geophytes, several weeks after the occurrence of fire through the savanna grassland at any time from approximately July until December, might perhaps be caused by the existence of a toxin the further production or action of which in the surface inches of soil is destroyed by the grass-fire. The onset of heavy rains in December may likewise remove the toxin from the upper layers of the soil.

Thus might be explained first the well-known poverty in available nitrogen of savanna soils which have been cleared of forest or woodland growth, secondly the general and almost universal practice throughout African savanna regions of burning the grassland before the planting of crops, and possibly the growth of woody vegetation in some areas following over-grazing of savanna soils.

The occurrence of one or more toxins secreted from these aggressive and supposedly somewhat recent grass species which have become established on the cleared and fire-devastated derived savannas of Africa requires further investigation.

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Responses of Pear Seedlings to *N*-Dimethylaminosuccinamic Acid, a Growth Retardant

N-dimethylaminosuccinamic acid ('*B*-995') has been found to stimulate flowering in clones of some woody ornamental plants[1]. Foliar sprays of '*B*-995' (Naugatuck Chemical Co., Bethany, Conn.) were applied to 2-year-old pear seedlings to examine the effect of the chemical on growth and juvenility. Groups of ten trees each were given the following treatments: (1) a single application of 4,000 p.p.m., July 9, 1962; (2) a single application of 8,000 p.p.m., July 9; (3) a triple application of 4,000 p.p.m., July 9, 16 and 23; (4) a triple application of 8,000 p.p.m., July 9, 16 and 23; (5) none. The young trees had been planted in 1961 directly in 3-gallon crocks of soil since maintained in a field.

Fig. 1. Spring growth of 3-year-old pear seedlings which had received three foliar sprays of 8,000 p.p.m. '*B*-995' (right) and no '*B*-995' (left). Treatment was given in mid-summer, 1962; photograph was taken May 16, 1963

The trees which received chemical treatments showed visible reduction in growth a month after the date of first application, and new growth was characterized by extremely short internodes and enlarged terminal tips. Tip enlargement was most pronounced on the trees given 3 applications of 4,000 p.p.m. '*B*-995'. There was no apparent foliar damage by the concentrations used, but leaf abscission on treated seedlings was much earlier than on control seedlings.

Retardation of growth was observed both in the autumn of 1962 and in the spring of 1963 (Fig. 1). The apical dominance of the terminal bud was reduced in all treatments and secondary branches were formed. Some seedlings that were given 3 applications of 4,000 p.p.m. '*B*-995' produced a pronounced rosette of secondary branches just below the terminal bud. The effects of the chemical on seedlings given one application of 4,000 p.p m. and 8,000 p.p.m. '*B*-995' became less evident as the spring progressed, but results obtained in June 1963 (Table 1) show that the seedlings given 3 applications of 4,000 p.p.m. and 8,000 p.p.m. '*B*-995' continued to have reduced terminal growth and, in addition, tended to have a high incidence of spur-type growth. This development of spurs was correlated with the reduction of terminal growth and suggests flower-bud formation.

Table 1. Influence of *N*-Dimethylaminosuccinamic Acid ('*B*-995') on Spur and Terminal Growth of 3-Year-Old Pear Seedlings. (Treatments applied in Mid-summer, 1962; Results obtained during June 22, 1963)

Treatment		Amount of spur growth						
		None		Some		Pronounced		
'*B*-995' rate (p.p.m.)	Applications	No.	Average terminal growth (cm)	No.	Average terminal growth (cm)	No.	Average terminal growth (cm)	Average terminal growth (cm)
0	–	10	36·32	0	—	0	—	36·32*a**
4,000	1	10	34·92	0	—	0	—	34·92*a*
8,000	1	5	35·31	5	31·50	0	—	33·40*a*
4,000	3	0	—	6	29·72	4	12·38	22·00*b*
8,000	3	0	—	2	34·93	8	9·21	14·35*b*
Average	—	—	35·56*a*†	—	31·32*a*	—	10·26*b*	—

* Means not followed by the same letter are significantly different at the 0·01 level (*LSD* at 0·05 = 6·60, at 0·01 = 9·68).
† *LSD* at 0·05 = 8·15; at 0·01 = 13·03.

Since the use of *N*-dimethylaminosuccinamic acid causes reduction in terminal growth and stimulates the formation of spur-type growth in pear seedlings, the chemical may have a potential as a regulator of growth and fruiting in commercial pear plantings.

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Experimental Production of Buds on the Roots of Potatoes

Two methods—breeding and the eye-excision technique of Asseyeva[1]—have been extensively used in the investigation of suspected periclinal chimeras in potatoes. They both give information on the *L*II layer at the stem apex (eye-excision may also sometimes apparently give information on *L*III). Evidence on the constitution of *L*I can be obtained for certain chimeras by X-ray treatment[2], but