

## Use of mammalian sex hormones for improving fertility in crosses

M. Ahmad

A. Rahman

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## **Abstract**

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**Ahmad, M. and A. Rahman.** Use of **mammalian** sex

hormones to improve fertility in crosses.

for **sexual** reproduction might be locking or produced sub-minimolly in the lysine-5 **mutants**.

Since the preparation of the mycelial **extract** is a time-consuming process, we investigated whether or not some of the commercially **available** mole and female **mammalian** hormones improve the fertility of crosses of lysine-5 **mutants**. The hormones used **were** methyl testosterone, ethyl testosterone, **testosterodiol propionate**, testosterone and progesterone. **Concentrations** of 12.5, 25, 50, 100, 200, **300, 400 and** 800 parts per million of these hormones were prepared and 6 drops, of **each** of these concentrations, were put into crossing tuber 4-6 **hours** before the crosses **were** mode.

**Out** of the five hormones used, the mole hormone, testosterone, and the **female** hormone, progesterone, **gave** the best results. Secondly, a hormone concentration of 50 parts per million **gave** the optimum improvement in the fertility of the crosses. Hence, in further experiments solutions of only these two hormones, in **concentrations** of 50 **parts** per million, were used.

**It was then** investigated whether testosterone or progesterone or a mixture of the **two** hormones (testosterone 25 **parts** per million and progesterone 25 **parts** per million) would give the **maximum** improvement in fertility. Six crosses were mode **and each** cross **was carried out** under **four** different conditions as **shown** in **Table 1**, column 1.

The **data, as** recorded in **Table 1**, show that the **simultaneous** employment of both testosterone and progesterone gives the best fertility. Hence, further **experiments** were done using 6 drops of a solution **containing** 25 **parts** per million of **each** of 'he hormones, testosterone and progesterone.

**Finally, on investigation** war conducted to find **out** whether the mycelial **extract** or the **two mammalian** sex hormones were better for improving the fertility of **lysine-5 mutants**. Eight pairs of **mutants** were crossed for this **purpose**. The **data** in **Table 2** show that the mixture of the two hormones effected **a greater** improvement in fertility than the mycelial **extract** by giving larger and more numerous **perithecia** and more frequent, **earlier and** better spore shedding.

**Ahmad et al. (1967 Neurospora Newsl. 11: 19)** improved fertility in crosses of **some** lysine-5 **mutants** of **N. crassa** by using mycelial **extract** from a **highly** fertile cross, **Em a (5297) x Teu-1 (33757) A**. They used the **mycelial extract** assuming that one or **more hormones** required

**Table 1.** Effect of **mammalina** hormones on **crosses of lysine-5 mutants**.

Treatment	Abundance of spore shedding (in number of crosses)		
	None	Plenty	Abundant
None	6	0	0
Testosterone	5	1	0
Progesterone	4	2	0
Testosterone + progesterone	3	2	1

**Table 2.** Superiority of **mammalian** sex hormones over mycelial **extract** in improving fertility.

Treatment	Perithecia					Spores											
	Sire			Frequency		Doys token for shedding						Abundance of shedding					
	mall	Medium	Large	Medium	High	21	22	23	24	25	28	no'	shed	Poor	Plenty	Moderate	Abundant
<b>Mycelial extract</b>	0	2	6	5	3	0	0	0	1	4	1	2		4	2	0	0
<b>Testosterone + progesterone</b>	0	0	8	0	8	1	2	1	1	2	1	0		0	5	2	1