Agricultural Tools: Bio-thermal Energy

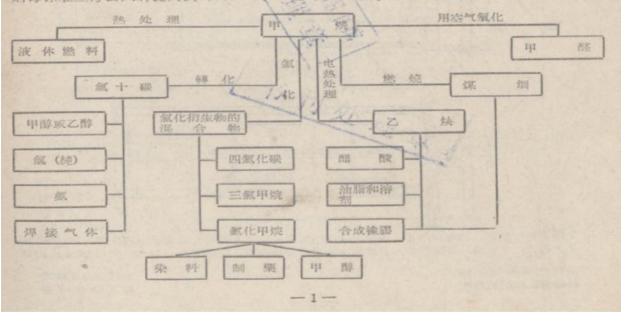
The text describes the advantages of using biothermal energy for heating, generating electric energy and producing fertilizer. Experiments with biogas produced from agricultural waste and manure started in 1958 and is still used today as a renewable energy source.

新的农業能源一沼气

沼气的用途,沼气是將各种有机廢物(如人畜尿粪、藁杆、杂草、落叶、湖草、垃圾、污水、污泥,以及屠宰厂、皮革場和厨房廢物等)置于密閉池中發酵后所产生的一种能燃燒的气体。廢料經發酵后,不仅可以取得高效能的肥料、廉价的气体燃料和珍貴的化工原料,这种处理有机廢物的方法还能消灭病虫害,改善环境衛生。

利用經过沼气發酵的肥料將是提高农業产量的一种新的途徑。根据苏联資料,它比施用一般农肥的产量,每單位面积至少可以提高25—30%;在民主德国施这种肥,使每公頃甜菜收获量从360公担增加到500公担,而小麦由28公担提高到52公担;湖北省所做的小白菜試驗,比用人粪肥,每單位面积产量提高了10.5%;同时施用这种肥料能使农作物病虫害减輕,杂草减少(因为在资酵过程中有机廢物內的害虫、病菌和杂草种子都被杀死)。

發酵所得的沼气,可以燒水煮飯、点灯取暖、也能發动內燃机和开动汽車拖拉机。 据苏联資料,1立方公尺的沼气够于0.75公升汽油,它的热值:每标准立方公尺5,200— 5,900千卡(煤4,000—5,000千卡/公斤,汽油1,0000千卡/公升),如果洗掉二氧化碳, 则每标准立方公尺將提高到9,000—9,200千卡,36立方公尺的沼气压縮在網瓶內,可以



TITLE

Image 1 Bio-thermal Energy (xin de nongye nengyuan yi zhaoqi 新的农业能源一沼气)

DATE

1958

CREATOR

Unknown

PUBLISHER

Kexue puji chubanshe

RIGHTS

Personal Collection. Fair use.

DESCRIPTION

Image 1 introduces the production of biogas and a chemical degradation scheme.

Source: 'No. 1' in Quanguo nongju zhanlanhui (ed.), *Fixed Propulsion Machinery on the Countryside* (Quanguo nongju zhanlanhui – tujian zhanpin – nongcun guding dongli jixie 全国 农具展览会 - 推荐展品 – 农村固定动力机械) (Beijing: Kexue puji chubanshe, 1958).

乙: 浙江农学院 A 型池 建筑材料: 石塊, 杉木, 石灰, 水泥。 池子結構: 帶粪水循环池。 A-A 剖櫆 30-100-B-8 剖視

1 美水循环池磚牆, 2 美水循环池, 3 攪拌柄, 4 卸料間, 5 擋池板, 6 田气喇叭管, 7 杉木盖板, 8 三合土層, 9 土層, 10 攪拌器, 11 殼酵間, 12石牆, 13 进料間, 14 进料洞, 15 卸料洞, 16 类水循环口。

TITLE

Image 2 Bio-thermal Energy (xin de nongye nengyuan yi zhaoqi 新的农业能源一沼气)

DATE

1958

CREATOR

Unknown

PUBLISHER

Kexue puji chubanshe

RIGHTS

Personal Collection. Fair use.

DESCRIPTION

Image 2 introduces a biogas installation as devised by the Zhejiang Agricultural Institute, constructed fromstones, wood and cement. No. 13 is the filling hatch, no. 10 the stirring handle, no. 11 the fermenting room, and no. 6 the gas outlet.

Source: 'No. 1' in Quanguo nongju zhanlanhui (ed.), *Fixed Propulsion Machinery on the Countryside* (Quanguo nongju zhanlanhui – tujian zhanpin – nongcun guding dongli jixie 全国 农具展览会-推荐展品-农村固定动力机械) (Beijing: Kexue puji chubanshe, 1958).